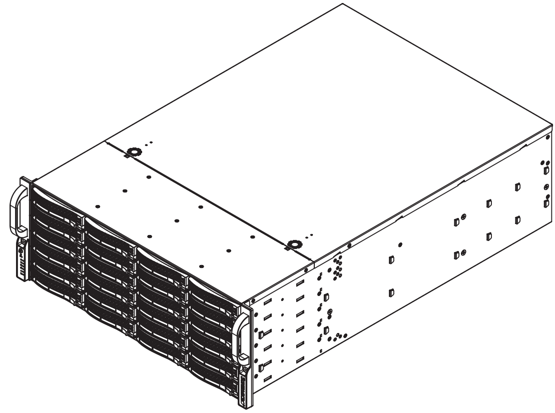
SUPERO®

# SC846 CHASSIS SERIES



SC846TQ-R1200B

| | |
|---|---|
| SC846E26-R1200B | SC826E16-R1200B |
| SC846E1-R1200B | SC846A-R1200B |
| SC846BE16-R920B | SC846BE26-R920B |
| SC846BA16-R920B | SC846BA26-R920B |
| SC846TQ-R900B | SC846E1-R900B |
| SC846E2-R900B | SC846E1-R710B |

# USER'S MANUAL

2.0a

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California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. "Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate"

WARNING: Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.

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# Preface

## About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SC846 chassis. Installation and maintenance should be performed by experienced technicians only.

This manual lists compatible parts available when this document was published. Always refer to the our Web site for updates on supported parts and configurations.

# Manual Organization

## Chapter 1 Introduction

The first chapter provides a checklist of the main components included with this chassis and describes the main features of the SC846 chassis. This chapter also includes contact information.

## Chapter 2 System Safety

This chapter lists warnings, precautions, and system safety. It recommended that you thoroughly familiarize yourself installing and servicing this chassis safety precautions.

## Chapter 3 Chassis Components

Refer here for details on this chassis model including the fans, bays, airflow shields, and other components.

## Chapter 4 System Interface

Refer to this chapter for details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

## Chapter 5 Chassis Setup and Maintenance

Follow the procedures given in this chapter when installing, removing, or reconfiguring your chassis.

## Chapter 6 Rack Installation

Refer to this chapter for detailed information on chassis rack installation. You should follow the procedures given in this chapter when installing, removing or reconfiguring your chassis into a rack environment.

## Appendices

This section lists compatible cables, power supply specifications, and compatible backplanes. Not all compatible backplanes are listed. Refer to our Web site for the latest compatible backplane information.

### Appendix A Cables and Hardware

This section provides information on cabling, and other hardware which is compatible with your chassis. For complete information on supported cables and hardware, refer to the Supermico Web site at www.supermicro.com.

### Appendix B Power Supply Specifications

This chapter lists the specifications for the power supply provided with your chassis. For additional information, refer to the Supermicro website at www.supermicro.com.

### Appendix C SAS-846TQ Backplane Specifications

This section contains details specific to the SAS-846TQ backplane for the SC846TQ chassis. Additional information can be found on the Supermicro Web site at www.supermicro.com.

### Appendix D SAS-846EL Backplane Specifications

Refer to this chapter for detailed specifications on the SAS-846EL backplane for the SC846-EL chassis systems. Additional information can be found on the Supermicro Web site at www.supermicro.com.

### Appendix E SAS2-846EL Backplane Specifications

This section contains detailed specifications on the SAS2-846EL backplane for the SC846-EL chassis system. Additional information can be found on the Supermicro Web site at www.supermicro.com.

### Appendix F SC846B Chassis Specifications

This section provides information specific to the SC846B model chassis. Additional information can be found on the Supermicro Web site at www.supermicro.com.

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***Appendix F SC846B Chassis Specifications***

# Notes

# Chapter 1

# Introduction

## 1-1 Overview

Supermicro's SC846 4U chassis features a unique and highly optimized design. The chassis is equipped with redundant high-efficiency power supplies. High-performance fans provide ample optimized cooling and twenty-four hot-swappable drive bays offer maximum storage capacity.

## 1-2 Shipping List

Visit www.supermicro.com for the latest shipping lists for your chassis model.

| SC846 Chassis | | | | |
|---|---|---|---|---|
| **Model** | **CPU** | **HDD** | **PCI Slots** | **Redundant Power Supplies** |
| **SC846E16-R1200B** | DP/UP | 24x SAS/SATA | 7x FF | 1200W (Gold Level) |
| **SC846E26-R1200B** | DP/UP | 24x SAS/SATA | 7x FF | 1200W (Gold Level) |
| **SC846TQ-R1200B** | DP/UP | 24x SAS/SATA | 7x FF | 1200W (Gold Level) |
| **SC846E1-R1200B** | DP/UP | 24x SAS/SATA | 7x FF | 1200W (Gold Level) |
| **SC846A-R1200B** | DP/UP | 24x SAS/SATA | 7x FF | 1200W (Gold Level) |
| **SC846BE26-R920B** | DP/UP | 24x SAS/SATA | 7x FF | 920W |
| **SC846BE16-R920B** | DP/UP | 24x SAS/SATA | 7x FF | 920W |
| **SC846BA26-R920B** | DP/UP | 24x SAS/SATA | 7x FF | 920W |
| **SC846BA16-R920B** | DP/UP | 24x SAS/SATA | 7x FF | 920W |
| **SC846TQ-R900B** | DP/UP | 24x SAS/SATA | 7x FF | 900W |
| **SC846E1-R900B** | DP/UP | 24x SAS/SATA | 7x FF | 900W |
| **SC846E2-R900B** | DP/UP | 24x SAS/SATA | 7x FF | 900W |
| **SC846E1-R710B** | DP/UP | 24x SAS/SATA | 7x FF | 710W |

Note: A complete list of safety warnimgs is provided on the Supermicro web site at http://www.supermicro.com/about/policies/safety_information.cfm

## 1-3 Where to get Replacement Components

Though not frequently, you may need replacement parts for your system. To ensure the highest level of professional service and technical support, we strongly recommend purchasing exclusively from our Supermicro Authorized Distributors/System Integrators/Resellers. A list of Supermicro Authorized Distributors/System Integrators/Resellers can be found at: http://www.supermicro.com. Click the Where to Buy link.

## 1-4 Contacting Supermicro

**Headquarters**

Address: Super Micro Computer, Inc.
980 Rock Ave.
San Jose, CA 95131 U.S.A.
Tel: +1 (408) 503-8000
Fax: +1 (408) 503-8008
Email: marketing@supermicro.com (General Information)
support@supermicro.com (Technical Support)
Web Site: www.supermicro.com

**Europe**

Address: Super Micro Computer B.V.
Het Sterrenbeeld 28, 5215 ML
's-Hertogenbosch, The Netherlands
Tel: +31 (0) 73-6400390
Fax: +31 (0) 73-6416525
Email: sales@supermicro.nl (General Information)
support@supermicro.nl (Technical Support)
rma@supermicro.nl (Customer Support)

**Asia-Pacific**

Address: Super Micro Computer, Inc.
4F, No. 232-1, Liancheng Rd
Chung-Ho Dist., New Taipei City 235
Taiwan
Tel: +886-(2) 8226-3990
Fax: +886-(2) 8226-3991
Web Site: www.supermicro.com.tw
Technical Support:
Email: support@supermicro.com.tw
Tel: +886-(2)-8226-3990

## 1-5 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (http://www.supermicro.com/support/rma/).

Whenever possible, repack the chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

# Chapter 2

# Standardized Warning Statements for AC Systems

## 2-1 About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our web site at http://www.supermicro.com/about/policies/safety_information.cfm.

### Warning Definition

**Warning!**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

**警告の定義**
**この警告サインは危険を意味します。**
**人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、**
**電気回路に含まれる危険性に**注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符號代表危險。

您正處於可能身體可能會受損傷的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

Warnung

WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.

תקנון הצהרות אזהרה

הצהרות הבאות הן אזהרות על פי תקני התעשייה, על מנת להזהיר את המשתמש מפני חבלה פיזית אפשרית. במידה ויש שאלות או היתקלות בבעיה כלשהי, יש ליצור קשר עם מחלקת תמיכה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים.

יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארזי סופרמיקרו.

تحذير! هذا الرمز يعني خطر انك في حالة يمكن أن تتسبب في اصابة جسدية .
قبل أن تعمل على أي معدات، كن على علم بالمخاطر الناجمة عن الدوائر
الكهربائية
وكن على دراية بالممارسات الوقائية لمنع وقوع أي حوادث
استخدم رقم البيان المنصوص في نهاية كل تحذير للعثور ترجمتها

안전을 위한 주의사항

경고!

이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된 위험요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwings symbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuwing om deze te herleiden naar de desbetreffende locatie.

BEWAAR DEZE INSTRUCTIES

## Installation Instructions

**Warning!**

Read the installation instructions before connecting the system to the power source.

**設置手順書**

**システムを電源に接続する前に、設置手順書をお読み下さい。**

警告
将此系统连接电源前,请先阅读安装说明。

警告
將系統與電源連接前，請先閱讀安裝說明。

Warnung

Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

¡Advertencia!

Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Attention

Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

**יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.**

**اقرأ إرشادات التركيب قبل توصيل النظام إلى مصدر الطاقة**

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.

## Circuit Breaker

**Warning!**

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

サーキット･ブレーカー

**この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。**

**保護装置の定格が250 V、20 Aを超えないことを確認下さい。**

警告

此产品的短路(过载电流)保护由建筑物的供电系统提供，确保短路保护设备的额定电流不大于250V，20A。

警告

此產品的短路(過載電流)保護由建築物的供電系統提供，確保短路保護設備的額定電流不大於250V，20A。

Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à :250 V, 20 A.

**מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי המכשיר המגן מפני הקצר החשמלי הוא לא יותר מ-250 V, 20 A**

**هذا المنتج يعتمد على معدات الحماية من الدوائر القصيرة التي تم تثبيتها في المبنى**

**تأكد من أن تقييم الجهاز الوقائي ليس أكثر من: 20A, 250V**

경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde aparaat niet groter gedimensioneerd is dan 220V, 20A.

## Power Disconnection Warning

**Warning!**

The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components.

**電源切断の警告**

**システムコンポーネントの取り付けまたは取り外しのために、シャーシー内部にアクセスするには、**

**システムの電源はすべてのソースから切断され、電源コードは電源モジュールから取り外す必要があります。**

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg.Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.

¡Advertencia!

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

Attention

Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du chassis pour installer ou enlever des composants de systéme.

!אזהרה

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק
לפני גישה לחלק הפנימי של המארז לצורך התקנה או הסרת רכיבים.

يجب فصل النظام من جميع مصادر الطاقة وإزالة سلك الكهرباء من وحدة امداد
الطاقة قبل
الوصول إلى المناطق الداخلية للهيكل لتثبيت أو إزالة مكونات الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 섀시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Waarschuwing

Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels aangesloten op de voeding(en) van de behuizing te verwijderen

## Equipment Installation

**Warning!**

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

**機器の設置**

**トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されています。**

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.

¡Advertencia!

Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.

Attention

Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.

**!אזהרה**

**צוות מוסמך בלבד רשאי להתקין, להחליף את הציוד או לתת שירות עבור הציוד.**

**يجب أن يسمح فقط للموظفين المؤهلين والمدربين لتركيب واستبدال أو خدمة هذا الجهاز**

경고!

훈련을 받고 공인된 기술자만이 이 장비의 설치, 교체 또는 서비스를 수행할 수 있습니다.

Waarschuwing

Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door geschoold en gekwalificeerd personeel.

## Restricted Area

**Warning!**

This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

**アクセス制限区域**

**このユニットは、アクセス制限区域に設置されることを想定しています。**

**アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。**

警告

此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和钥匙或其它安全手段进出的场所。

警告

此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙或其他安全方式才能進入的區域。

Warnung

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

¡Advertencia!

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

Attention

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.

אזור עם גישה מוגבלת

אזהרה!
יש להתקין את היחידה באזורים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת
כלי אבטחה בלבד (מפתח, מנעול וכד').

تم تخصيص هذه الوحدة لتركيبها في مناطق محظورة .
يمكن الوصول إلى منطقة محظورة فقط من خلال استخدام أداة خاصة،
قفل ومفتاح أو أي وسيلة أخرى للأمان

경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키, 또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

Waarschuwing

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

## Battery Handling

**Warning!**

There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

**電池の取り扱い**

**電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。**

警告

电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

警告

電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

¡Advertencia!

Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

!אזהרה

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף
את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة استبدال البطارية بطريقة غير صحيحة فعليك
استبدال البطارية
فقط بنفس النوع أو ما يعادلها كما أوصت به الشركة المصنعة
تخلص من البطاريات المستعملة وفقا لتعليمات الشركة الصانعة

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing

Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

## Redundant Power Supplies

**Warning!**

This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

**冗長電源装置**

**このユニットは複数の電源装置が接続されている場合があります。**
**ユニットの電源を切るためには、すべての接続を取り外さなければなりません。**

警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告

此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein trom zugeführt wird, müssen alle Verbindungen entfernt werden.

¡Advertencia!

Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

Attention

Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées

**אם קיים יותר מספק אחד**

**!אזהרה**
**ליחידה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן**
**.את היחידה**

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة.
يجب إزالة كافة الاتصالات لعزل الوحدة عن الكهرباء

경고!

이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

Waarschuwing

Deze eenheid kan meer dan één stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

## Backplane Voltage

**Warning!**

Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

**バックプレーンの電圧**

**システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。**

**修理する際には注意ください。**

警告

当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告

當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

¡Advertencia!

Cuando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

Attention

Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.

סכנה בגלל האחורי

אזהרה!
קיימת סכנת מתח בגלל האחורי בזמן תפעול המערכת. יש להיזהר במהלך
העבודה.

هناك خطر من التيار الكهربائي أوالطاقة الموجودة على اللوحة
عندما يكون النظام يعمل كن حذرا عند خدمة هذا الجهاز

경고!

시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생합니다. 서비스 작업 시 주의하십시오.

Waarschuwing

Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

## Comply with Local and National Electrical Codes

**Warning!**

Installation of the equipment must comply with local and national electrical codes.

**地方および国の電気規格に準拠**
**機器の取り付けはその地方および国の電気規格に準拠する必要があります。**

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

La instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

Attention

L'équipement doit être installé conformément aux normes électriques nationales et locales.

**תיאום תקני החשמל הארצי**

**אזהרה!**

**התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.**

**تركيب المعدات الكهربائية يجب أن يمتثل للقوانين المحلية والوطنية المتعلقة بالكهرباء**

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

## Product Disposal

**Warning!**

Ultimate disposal of this product should be handled according to all national laws and regulations.

**製品の廃棄**

**この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。**

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

סילוק המוצר

!אזהרה
סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القوانين واللوائح الوطنية

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

## Hot Swap Fan Warning

**Warning!**

The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

**ファン・ホットスワップの警告**

**シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。**

警告

当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

警告

當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

Warnung

Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

¡Advertencia!

Los ventiladores podran dar vuelta cuando usted quite ell montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

!אזהרה

כאשר מסירים את חלק המאוורר מהמארז, יתכן והמאווררים עדיין עובדים. יש
להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

من الممكن أن المراوح لا تزال تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء
الأصابع ومفكات البراغي
وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة

경고!

새시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조림품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.

## Power Cable and AC Adapter

**Warning!**

When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the code) for any other electrical devices than products designated by Supermicro only.

**電源コードとACアダプター**

**製品を設置する場合、提供または指定された接続ケーブル、電源コードとACアダプターを使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSEマークがコードに表記)を Supermicroが指定する製品以外に使用することを禁止しています。**

警告

安裝此产品时,请使用本身提供的或指定的连接线,电源线和电源适配器.使用其它线材或适配器可能会引起故障或火灾。除了Supermicro所指定的产品,电气用品和材料安全法律规定禁止使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

警告

安裝此產品時,請使用本身提供的或指定的連接線,電源線和電源適配器.使用其它線材或適配器可能會引起故障或火災。除了Supermicro所指定的產品,電氣用品和材料安全法律規定禁止使用未經UL或CSA認證的線材。(線材上會顯示UL/CSA符號)。

Warnung

Bei der Installation des Produkts, die zur Verfügung gestellten oder benannt Anschlusskabel, Stromkabel und Netzteile. Verwendung anderer Kabel und Adapter kann zu einer Fehlfunktion oder ein Brand entstehen. Elektrische Geräte und Material Safety Law verbietet die Verwendung von UL-oder CSA-zertifizierte Kabel, UL oder CSA auf der Code für alle anderen elektrischen Geräte als Produkte von Supermicro nur bezeichnet gezeigt haben.

¡Advertencia!

Al instalar el producto, utilice los cables de conexión previstos o designados, los cables y adaptadores de CA. La utilización de otros cables y adaptadores podría ocasionar un mal funcionamiento o un incendio. Aparatos Eléctricos y la Ley de Seguridad del Material prohíbe el uso de UL o CSA cables certificados que tienen UL o CSA se muestra en el código de otros dispositivos eléctricos que los productos designados por Supermicro solamente.

Attention

Lors de l'installation du produit, utilisez les bables de connection fournis ou désigné. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et de loi sur la sécurité Matériel interdit l'utilisation de UL ou CSA câbles certifiés qui ont UL ou CSA indiqué sur le code pour tous les autres appareils électriques que les produits désignés par Supermicro seulement.

חשמליים ומתאמי AC

אזהרה!
כאשר מתקינים את המוצר, יש להשתמש בכבלים, ספקים ומתאמים AC אשר
נועדו וסופקו לשם כך. שימוש בכל כבל או מתאם אחר יכול לגרום לתקלה או
קצר חשמלי. על פי חוקי שימוש במכשירי החשמל וחוקי בטיחות, קיים איסור
להשתמש בכבלים המוסמכים ב- UL או ב- CSA (כשאר מופיע עליהם קוד של
UL/CSA) עבור כל מוצר חשמלי אחר שלא צוין על ידי סופרמיקרו בלבד.

عند تركيب الجهاز يجب استخدام كابلات التوصيل والكابلات الكهربائية
ومحولات التيار المتردد
التي - أن استخدام أي كابلات ومحولات أخرى يتسبب في حدوث عطل أو حريق
تم توفيرها لك مع المنتج
الأجهزة الكهربائية ومواد قانون السلامة يحظر استخدام الكابلات CSA أو UL
معتمدة من قبل
لأي أجهزة كهربائية أخرى غير المنتجات المعينة من قبل Supermicro
(التي تحمل علامة UL/CSA)

경고!

제품을 설치할 때에는 제공되거나 지정된 연결케이블과 전원케이블, AC어댑터를 사용해야 합니다. 그 밖의 다른 케이블들이나 어댑터들은 고장 또는 화재의 원인이 될 수 있습니다. 전기용품안전법 (Electrical Appliance and Material Safety Law)은 슈퍼마이크로에서 지정한 제품들 외에는 그 밖의 다른 전기 장치들을 위한 UL또는 CSA에서 인증한 케이블(전선 위에 UL/CSA가 표시)들의 사용을 금지합니다.

Waarschuwing

Bij het installeren van het product, gebruik de meegeleverde of aangewezen kabels, stroomkabels en adapters. Het gebruik van andere kabels en adapters kan leiden tot een storing of een brand. Elektrisch apparaat en veiligheidsinformatiebladen wet verbiedt het gebruik van UL of CSA gecertificeerde kabels die UL of CSA die op de code voor andere elektrische apparaten dan de producten die door Supermicro alleen.

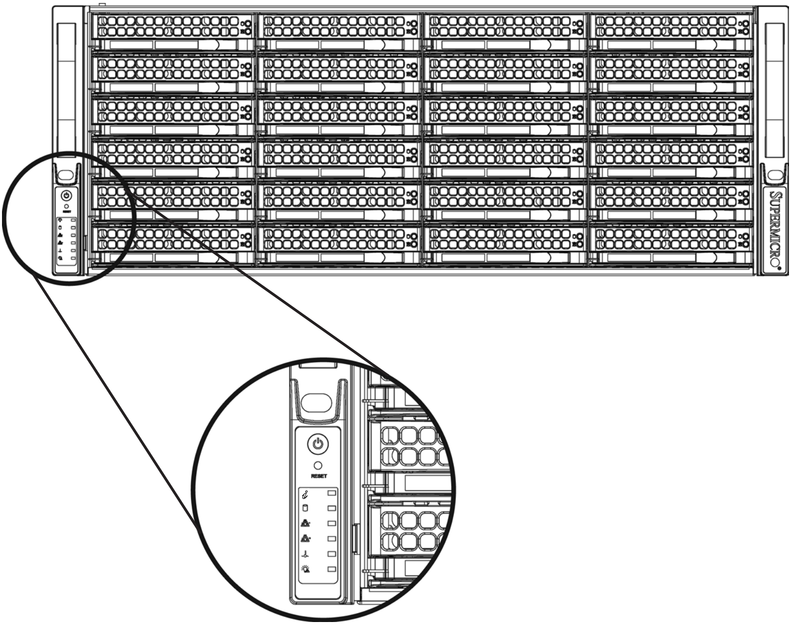
# Notes

# Chapter 3

# System Interface

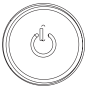
## 3-1 Overview

There are several LEDs on the control panel as well as others on the drive carriers to keep you constantly informed of the overall status of the system as well as the activity and health of specific components. Most SC846 models have two buttons on the chassis control panel: a reset button and a power on/off switch. This chapter explains the meanings of all LED indicators and the appropriate responses you may need to take.

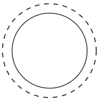


## 3-2 Control Panel Buttons

There are two push-buttons located on the left handle of the chassis. These are (in order from top to bottom) a power on/off button and a reset button.



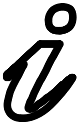
**Power:** The main power button is used to apply or remove power from the power supply to the server system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug system before servicing.



**Reset:** The reset button is used to reboot the system.

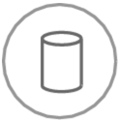
## 3-3 Control Panel LEDs

The control panel located on the left handle of the SC846 chassis has five LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.

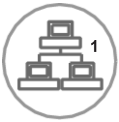


**Informational LED:**

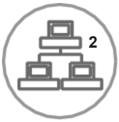
Continuously on and blue: UID function has been activated.
Flashing red: Fan failure.
Continuously on and red: Overheat condition. This may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. Check the routing of the cables and make sure all fans are present and operating normally. You should also check to make sure that the chassis covers are installed. Finally, verify that the heatsinks are installed properly. This LED will remain flashing or on as long as the overheat or fan failure condition exists.



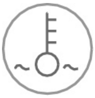
**HDD:** Indicates IDE channel activity. SAS/SATA drive, and/or DVD-ROM drive activity when flashing.



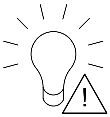
**NIC1:** Indicates network activity on GLAN1 when flashing.



**NIC2:** Indicates network activity on GLAN2 when flashing.



**Overheat/Fan Fail:** When this LED flashes, it indicates a fan failure. When continuously on (not flashing) it indicates an overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. Check the routing of the cables and make sure all fans are present and operating normally. You should also check to make sure that the chassis covers are installed. Finally, verify that the heatsinks are installed properly. This LED will remain flashing or on as long as the overheat condition exists.



**Power Failure:** When this LED flashes, it indicates a failure in the redundant power supply.

## 3-4 Drive Carrier LEDs

Your chassis uses SAS/SATA.

### SAS/SATA Drives

Each SAS/SATA drive carrier has two LEDs.

- **Blue:**
  Solid on = Drive is present and available.
  Blinking = Drive is actively being accessed.
  Each Serial ATA drive carrier has a blue LED. When illuminated in a solid on state, this blue LED (on the front of the SAS/SATA drive carrier) indicates drive activity. A connection to the SAS/SATA backplane enables this LED to blink on and off when that particular drive is being accessed.

- **Red:**
  Solid on = Drive failure
  Blinking = Rebuilding RAID
  The red LED to indicate an SAS/SATA drive failure. If one of the SAS/SATA drives fail, you should be notified by your system management software.

### SCSI Drives

This chassis does not support SCSI drives at this time.

# Chapter 4

# Chassis Setup and Maintenance

## 4-1 Overview

This chapter covers the steps required to install components and perform maintenance on the chassis. The only tool you will need to install components and perform maintenance is a Phillips screwdriver. Print this chapter to use as a reference while setting up your chassis.

For SC846B model chassis, see Appendix F of this manual, as the installation procedures differ for this chassis model.

Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 2: System Safety and the warnings/precautions listed in the setup instructions.

**Safety Warning:** Before performing any chassis setup or maintenance, it is recommended that the chassis be removed from the rack and placed on a stable bench or table. For instructions on how to uninstall the chassis from the rack, refer to Chapter 5 Rack Installation in this manual.

## 4-2 Removing the Chassis Cover

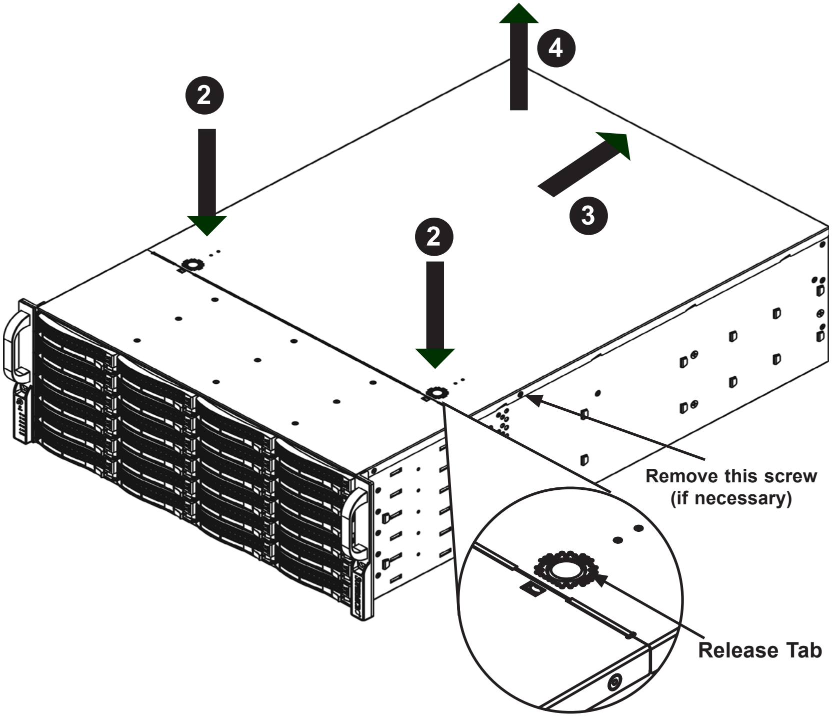


Figure 4-1: Removing the Chassis Cover

***Removing the Chassis Cover***

1. Power down the system and remove the power cords from the back of the power supplies.

2. Press the release tabs to remove the cover from the locked position. Press both tabs at the same time.

3. Once the top cover is released from the locked position, slide the cover toward the rear of the chassis.

4. Lift the cover off the chassis.

Warning: Except for short periods of time, do NOT operate the server without the cover in place. The chassis cover must be in place to allow proper airflow and prevent overheating.

## 4-3 Installing Hard Drives

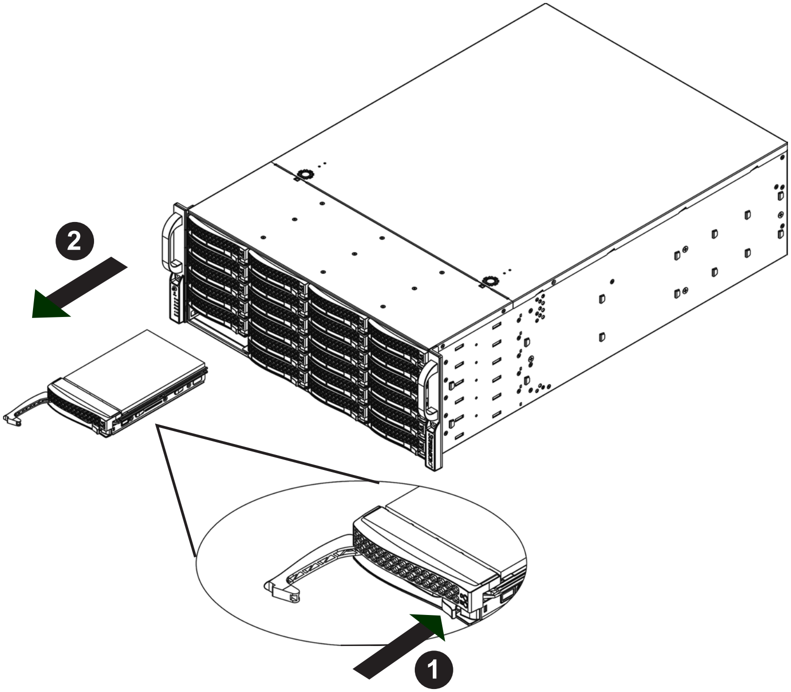


**Figure 4-2: Removing a Hard Drive Carrier**

The SC846 features hot-swappable hard drives in carriers that can be removed from the chassis without powering down the server.

***Removing Hard Drive Carriers from the Chassis***

1. Press the release button on the drive carrier. This extends the drive carrier handle.

2. Use the handle to pull the drive out of the chassis.

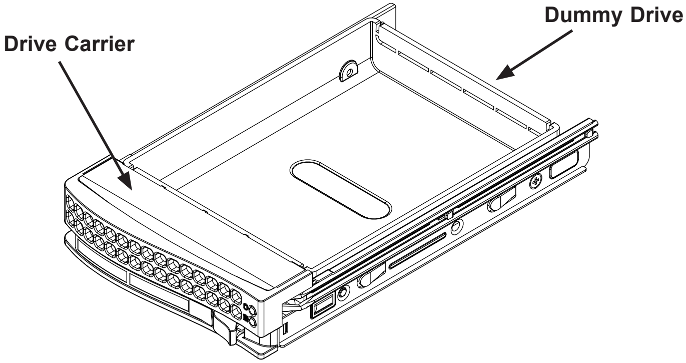


**Figure 4-3: Chassis Drive Carrier**

The drives are mounted in drive carriers to simplify their installation and removal from the chassis. These carriers also help promote proper airflow for the drive bays. Warning: Except for short periods of time (swapping hard drives), do not operate the server with the hard drive bays empty.

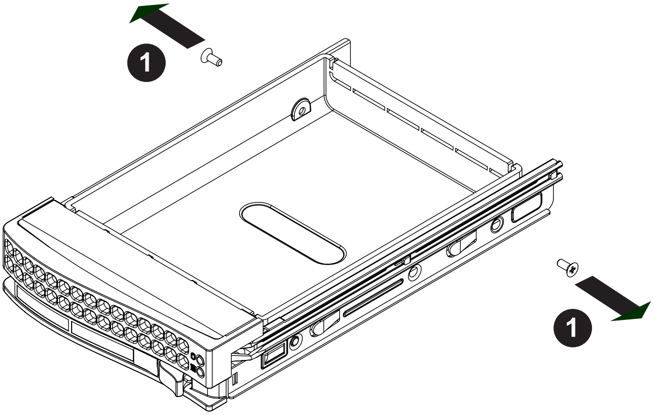


**Figure 4-4: Removing a Dummy Drive from the Drive Carrier**

### *Installing a Hard Drive into the Hard Drive Carrier*

1. Remove the two screws securing the dummy drive to the drive carrier and remove the dummy drive. Place the drive carrier on a flat surface such as a desk, table or work bench.

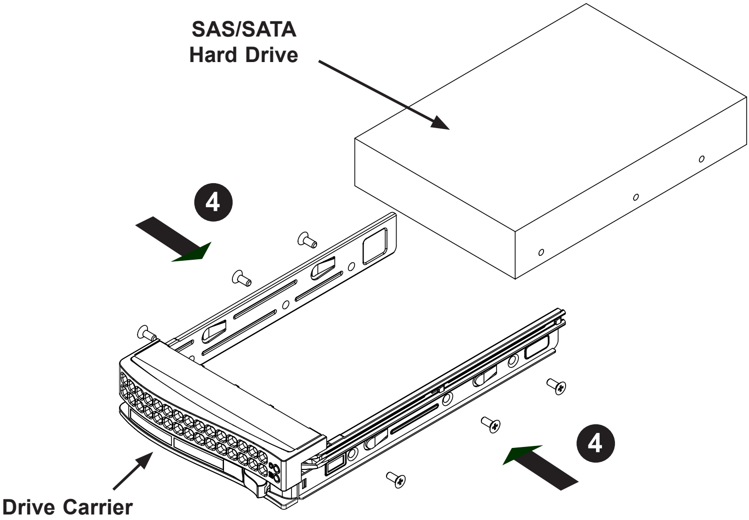


Figure 4-5: Installing the Hard Drive into the Drive Carrier

2. Slide the hard drive into the carrier with the printed circuit board side facing down.

3. Carefully align the mounting holes in both the drive carrier and the hard drive.

4. Secure the hard drive to the carrier using six screws.

5. Replace the drive carrier into the chassis. Make sure to close the drive carrier handle to lock the drive carrier into place.

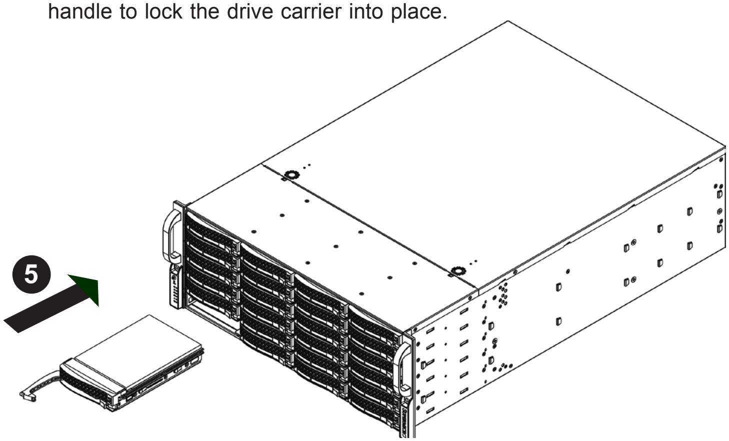


Figure 4-6: Installing the Hard Drive

## 4-4 Installing the Motherboard

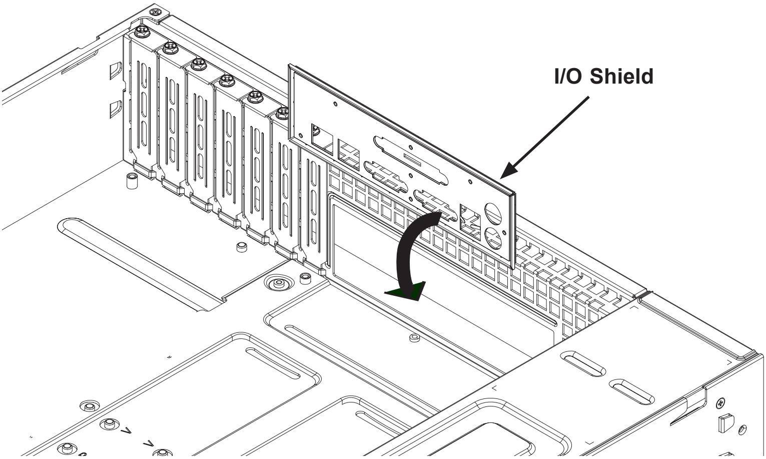


Figure 4-7: I/O Shield Placement

### I/O Shield

The I/O shield holds the motherboard ports in place. Install the I/O shield before you install the motherboard.

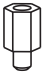
*Installing the I/O Shield*

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, and precautions.
2. Power down the system, remove the power cords from the back of the power supplies, lay the chassis on a flat surface, and open the chassis cover.
3. With the illustrations facing the outside of the chassis, place the shield into the space provided.
4. Once installed, the motherboard will hold the I/O shield in place.

## Permanent and Optional Standoffs

Standoffs prevent short circuits by securing space between the motherboard and the chassis surface. The SC846 chassis includes permanent standoffs in locations used by most motherboards. These standoffs accept the rounded Phillips head screws included in the SC846 accessories packaging.

Some motherboards require additional screws for heatsinks, general components and/or non-standard security. Optional standoffs are included to these motherboards. To use an optional standoff, you must place the hexagonal screw through the bottom the chassis and secure the screw with the hexagon nut (rounded side up).



M/B standoff
6-32 to 6-32

**Figure 4-8: Chassis Standoffs**

***Installing the Motherboard***

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, precautions, and cable connections.

2. Power down the system, remove the power cords from the rear of the power supplies and open the chassis cover as described in Section 4-1.

3. As required by your motherboard, install standoffs in any areas that do not have a permanent standoff. To do this:

   A. Place a hexagonal standoff screw through the bottom the chassis.

   B. Secure the screw with the hexagon nut (rounded side up).

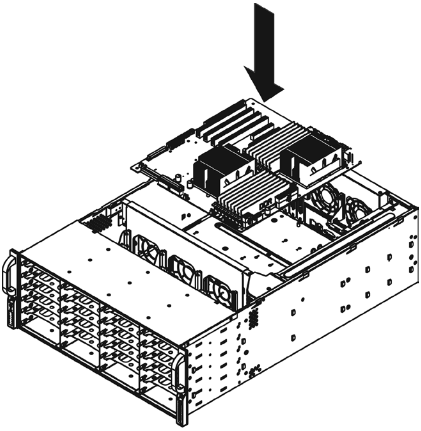


Figure 4-9: Motherboard Installation

4. Place the motherboard in the chassis aligning the permanent and optional standoffs

5. Secure the motherboard to the chassis using the rounded, Phillips head screws. Do not exceed eight pounds of torque when tightening down the motherboard.

6. Secure the CPU(s), heatsinks, and other components to the motherboard as described in the motherboard documentation.

7. Connect the cables between the motherboard, backplane, chassis, front panel, and power supply, as needed. The fans may be temporarily removed to allow access to the backplane ports.

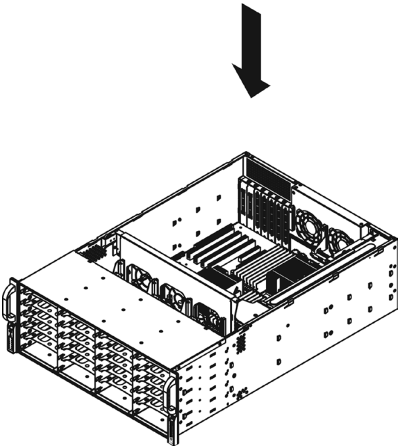


Figure 4-10: Secure the Motherboard to the Chassis

## Expansion Card Setup

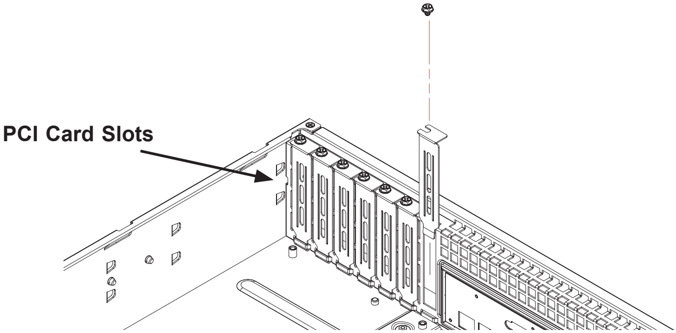


**Figure 4-11: Installing Expansion Cards**

The SC846 chassis includes PCI slots for expansion cards.

***Installing Expansion Cards in the SC846 Chassis:***

1. Power down the system, remove the power cords from the rear of the power supplies, lay the chassis on a flat surface, and open the chassis cover as described in Section 4-1.

2. Remove the screw holding the cover in place for each PCI slot you want to use. Keep this screw for later use.

3. Connect the expansion card to the mother board.

4. Secure each card to the chassis using the card's L bracket and the previously removed screw.

## 4-5 Installing the Air Shroud

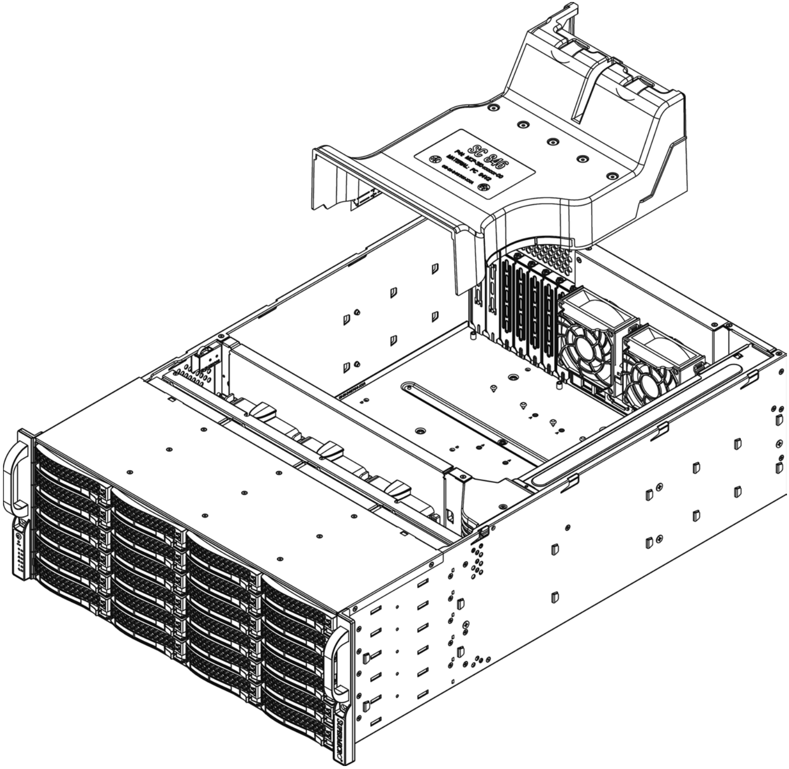


Figure 4-12: Air Shroud for SC846LP Chassis

Air shrouds concentrate airflow to maximize fan efficiency. The SC846 chassis air shroud does not require screws to set up

*Installing the Air Shroud*

1. Power down the system, remove the power cords from the rear of the power supplies and remove the cover as described in Section 4-1.

2. Confirm that your air shroud matches your chassis model. Each shroud is labeled SC846LP, SC846RC, or SC846U.

3. Disconnect the power supply, lay the chassis on a flat surface, and open the chassis cover.

4. Place air shroud in the chassis. The air shroud fits behind the two fans closest to the power supply.

## 4-6 Checking the Server's Airflow

***Checking the Airflow***

1. Make sure there are no objects to obstruct airflow in and out of the server.

2. Do not operate the server without drives or drive carriers in the drive bays. Use only recommended server parts.

3. Make sure no wires or foreign objects obstruct air flow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.

The control panel LEDs inform you of system status. See “Chapter 3: System Interface” for details on the LEDs and the control panel buttons.

In most cases, the chassis power supply and fans are pre-installed. If you need to install fans continue to the System Fan section of this chapter. If the chassis will be installed into a rack, continue to the next chapter for rack installation instructions

## 4-7 System Fans

Five heavy-duty system fans (three front fans and two rear fans) provide cooling for the chassis. These fans circulate air through the chassis as a means of lowering the chassis internal temperature.

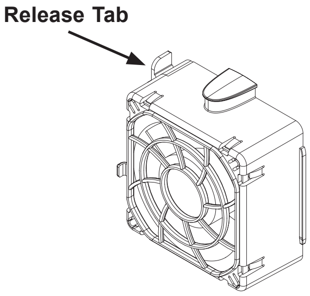


**Figure 4-13: Front System Fan**

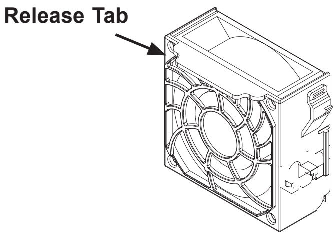


**Figure 4-14: Rear System Fan**

***Replacing a System Fan***

1. If necessary, open the chassis while the power is running to determine which fan has failed. (Never run the server for an extended period of time with the chassis open.)

2. Power down the system, disconnect the power cords from the back of the power supplies, lay the chassis on a flat surface, and open the chassis cover.

3. Remove the failed fan's power cord from the serverboard.

4. Press the fan release tab to lift the failed fan from the chassis and pull it completely from the chassis.

5. Place the new fan into the vacant space in the housing while making sure the arrows on the top of the fan (indicating air direction) point in the same direction as the arrows on the other fans.

6. Power up the system and check that the fan is working properly before replacing the chassis cover.

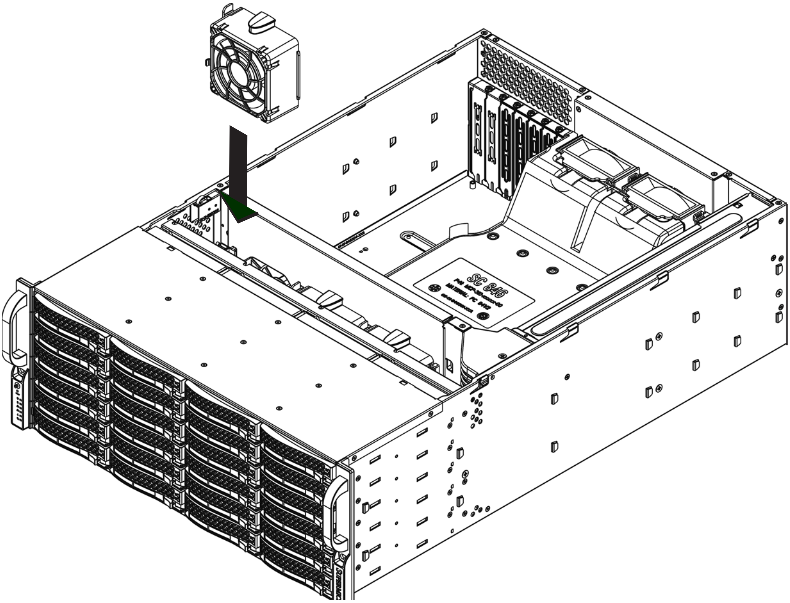


Figure 4-15: Placing the Front System Fan

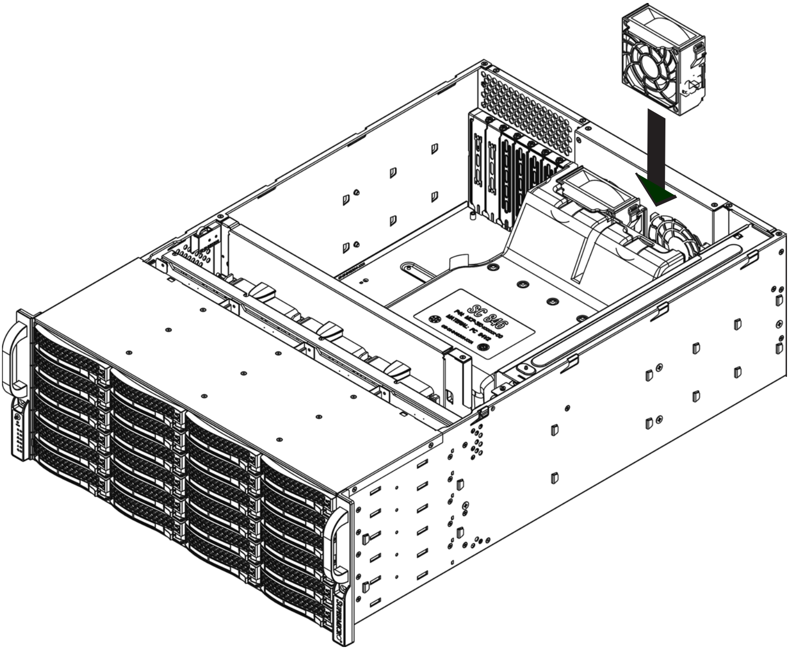


Figure 4-16: Placing the Rear System Fan

## 4-8 Power Supply

The SC846 chassis has either a 710, 900, 920 or 1200 Watt, high-efficiency redundant power supply. This power supply is auto-switching capable. This enables it to automatically sense and operate at a 100v to 240v input voltage. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

Redundant power supplies are hot-swappable, and can be changed without powering down the system. New units can be ordered directly from Supermicro at http://www.supermicro.com

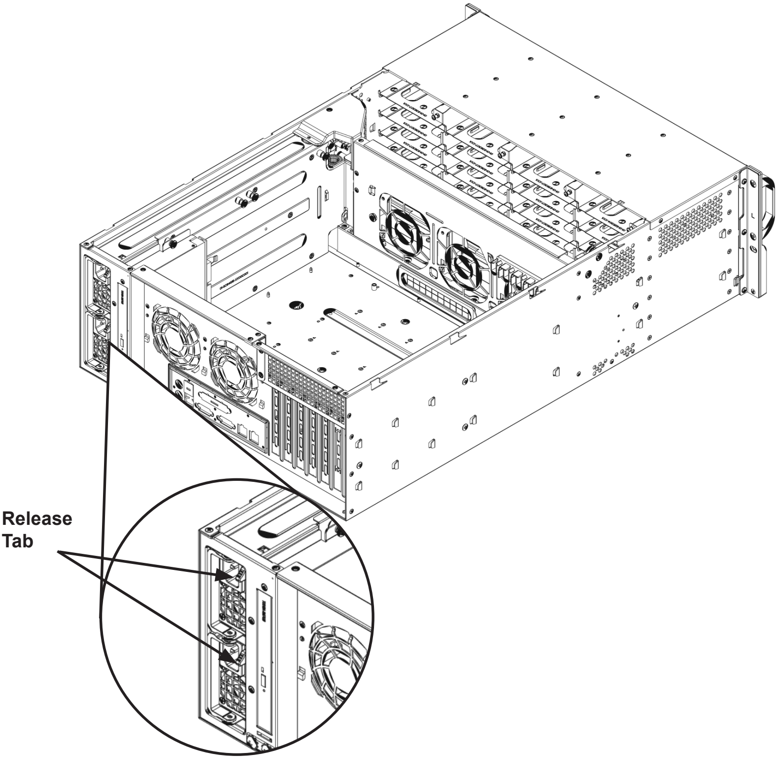


**Figure 4-17: Power Supply Release Tab**

***Changing the Power Supply:***

1. Your chassis includes a redundant power supply with two power modules which enables you to leave the system running and remove one power supply. If your server has only one power supply installed, you must power down the system and unplug the power cord.

2. Push the release tab on the back of the power supply as illustrated

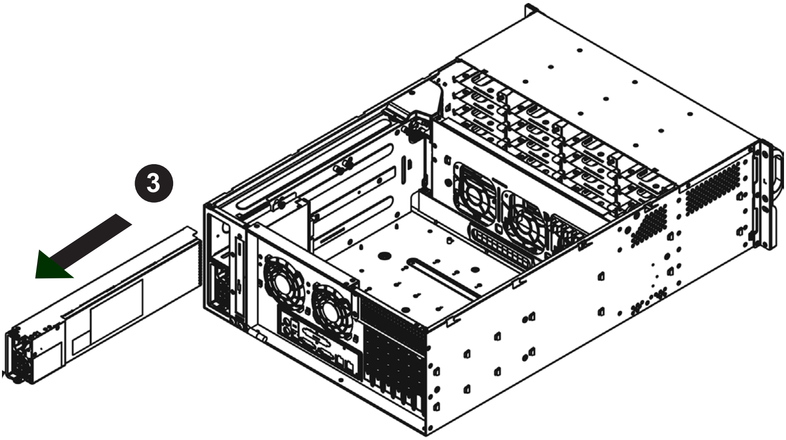


Figure 4-18: Removing the Power Supply

3. Pull the power supply out using the handle provided.

4. Replace the failed power module with another of the same model.

5. Push the new power supply module into the power bay until it clicks into the locked position.

6. Plug the power cord back into the rear of the power module and power up the system.

## 4-9 Changing the Power Distributor

Server chassis above 2U require a power distributor. The power distributor provides failover and power supply redundancy. In the unlikely event that you must change the power distributor, do following:

### *Changing the Power Distributor*

Power down the system, disconnect the power cords from the back of the power supplies, lay the chassis on a flat surface, and open the chassis cover.

1. Remove all cable connections to the power supplies from the motherboard, backplane, and other components. Also, remove both power supplies.
2. Locate the power distributor between the power supply and the fan row.

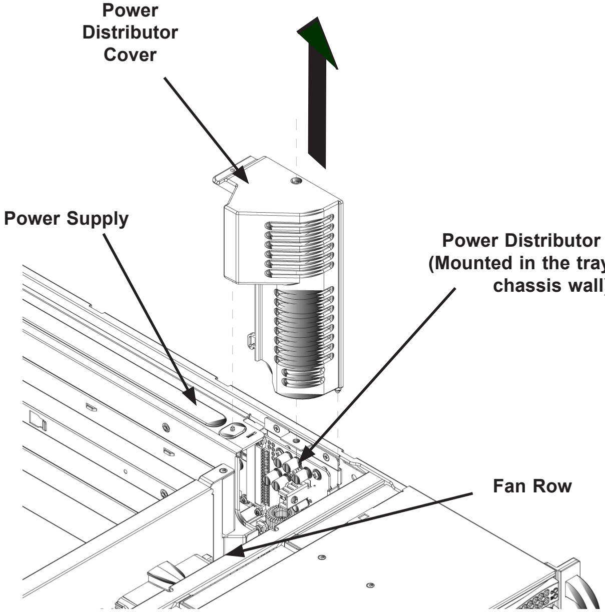

Power Distributor Cover
Power Supply
Power Distributor Board (Mounted in the tray on the chassis wall)
Fan Row

**Figure 4-19: Removing the Power Distributor Cover**

3. Remove the two screws securing the power distributor housing to the chassis wall

4. Remove the three screws securing the power distributor to the housing.

5. Gently pull the power distributor and housing from the chassis. Carefully guide all the cables through the power distributor housing.

6. Remove the power distributor from the housing.

7. Slide the new power distributor module into the power distributor housing. Make sure that you slide the cables through the bottom of the housing.

8. Reconnect all the cables, replace the power supply, plug the power cords back into the power supplies and power up the system.

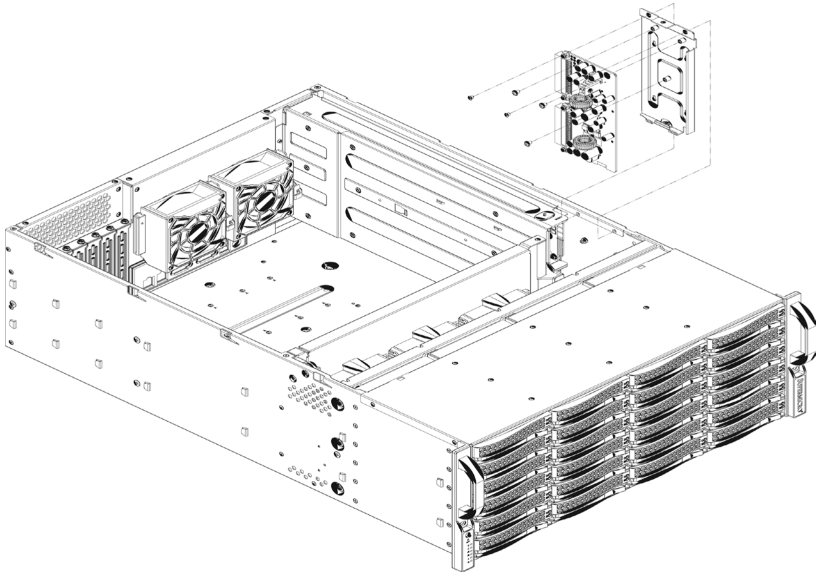


Figure 4-20: Removing the Power Distributor and Housing

## 4-10 Changing the CD-ROM or DVD-ROM and HDD Trays

The SC846 chassis supports the following drive configuration options:

| Position | Description |
|---|---|
| Position A | N/A (Default), or single 3.5" HDD tray, or dual 2.5" HDD tray. |
| Position B | Dummy cover (default), or single 3.5" HDD tray, single 2.5" HDD tray, DVD, or FDD. |

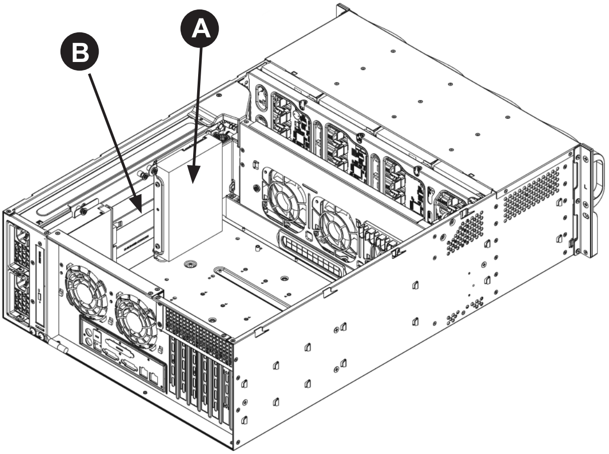


**Figure 4-21: Drive Location Options**

After selecting one of the drive configuration options listed above, use the following instructions to install the drives and their trays into the chassis.

### *Installing the Fixed Hard Drive*

1. Power down the system and unplug the power cord from the back of the power supplies and remove the chassis cover.

2. Install the fixed hard drive into the hard drive tray using four round head screws (6-32) and two Mylar washers.

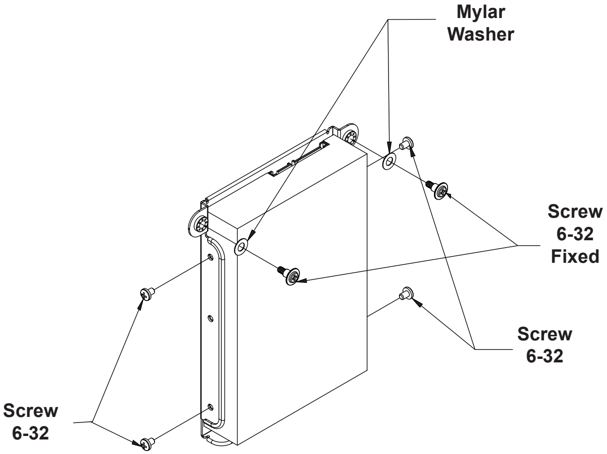

Mylar Washer
Screw 6-32 Fixed
Screw 6-32
Screw 6-32

Figure 4-22: Securing the Fixed Hard Drive into the Tray

3. Lower the drive and tray into the chassis, carefully inserting the lower rubber-lined holes onto the pins at the base of the chassis and aligning the upper rubber holes with the holes in the chassis.

4. Use the two drive tray screws with Mylar washers to secure the hard drive and drive tray on the standoff power supply cage.

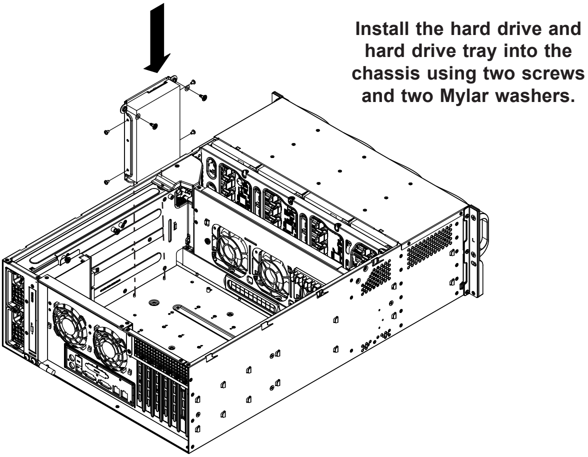

Install the hard drive and hard drive tray into the chassis using two screws and two Mylar washers.

Figure 4-23: Installing the HDD and HDD Tray in the Chassis

5. Connect the power and data cables from the drive to other chassis components including the motherboard and power distributor board.

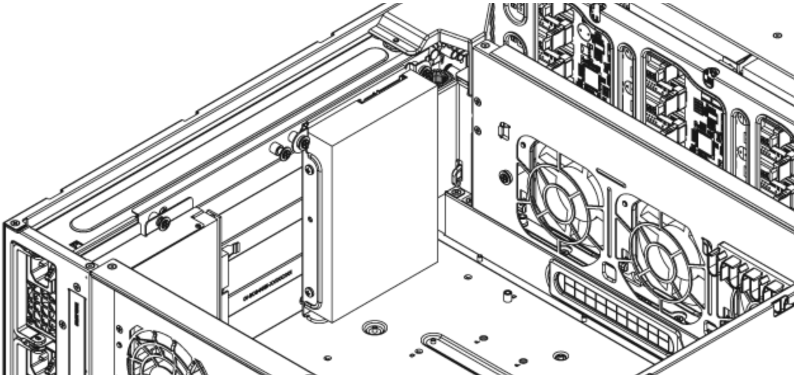


Figure 4-24: Hard Drive and Hard Drive Tray Installed in the Chassis

## 4-11 Accessing the Backplane

The SC846 chassis backplane is located behind the hard drives and in front of the front system fans. In order to change jumper settings on the backplane, it may be necessary to remove the backplane from the chassis.

*Removing the Backplane*

1. Power down the system, remove the power cords from the back of the power supplies and remove the chassis cover.

2. Disconnect the cabling to the backplane.

3. Remove the four upper screws securing backplane housing to the chassis and set these aside for later use.

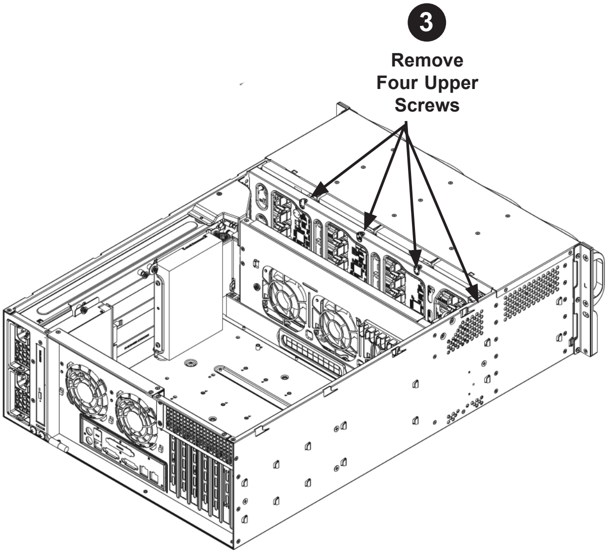


**Figure 4-25: Removing the Upper Backplane Housing Screws**

4. Remove the five lower screws securing the backplane housing to the chassis floor and set these aside for later use.

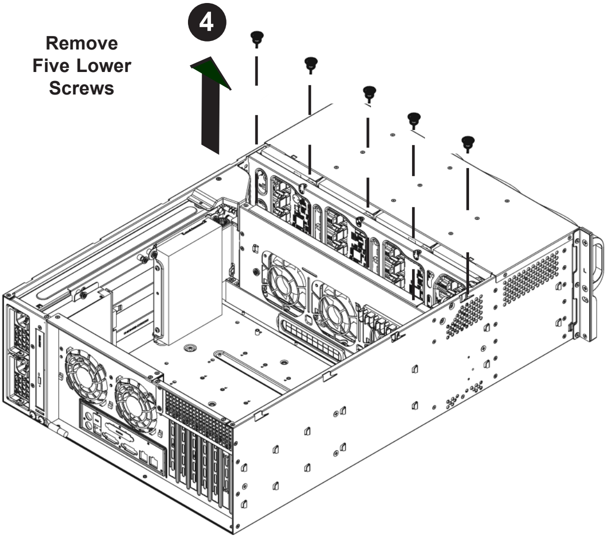

4
Remove
Five Lower
Screws

Figure 4-26: Removing the Lower Backplane Housing Screws

5. Gently ease the backplane up and out of the chassis.

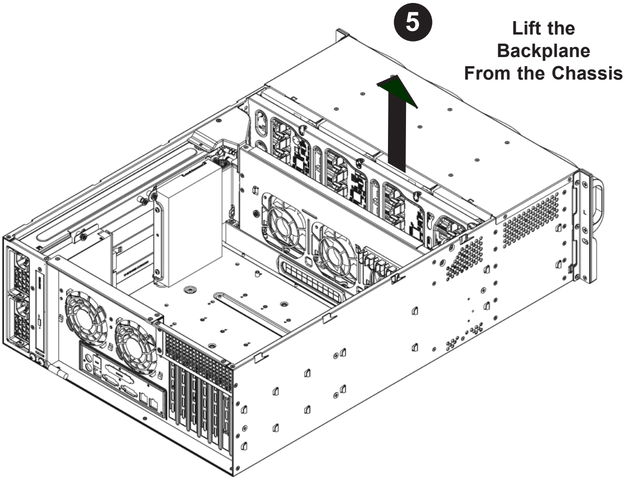

5
Lift the
Backplane
From the Chassis

Figure 4-27: Removing the Backplane from the Chassis

### *Installing the Backplane*

1. Gently slide the backplane and its housing back into position in the chassis.

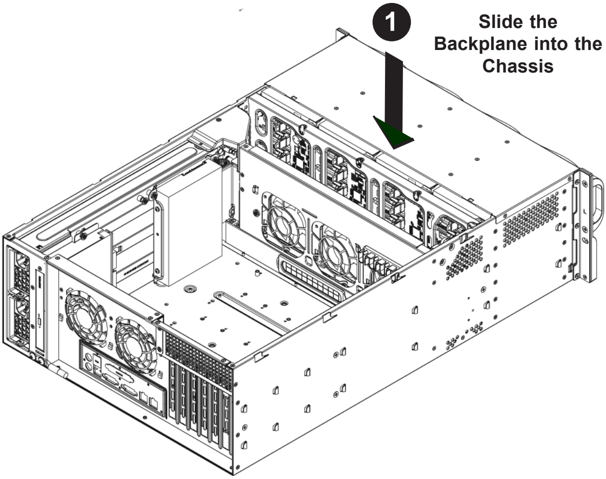

1
Slide the Backplane into the Chassis

Figure 4-28: Replacing the Backplane in the Chassis

2. Replace the five lower screws which secure the backplane housing to the chassis floor.

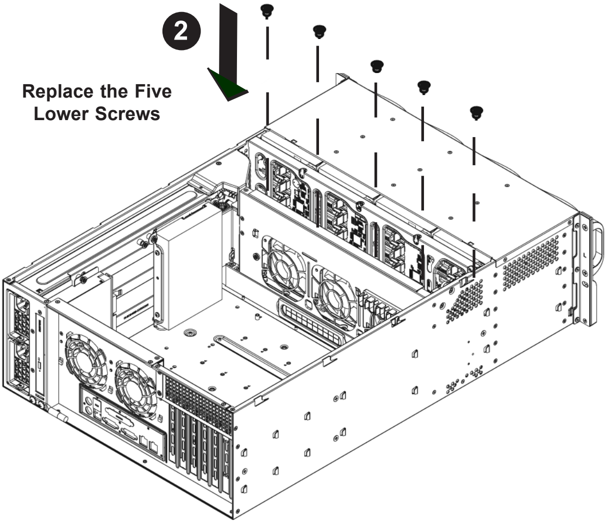

2
Replace the Five Lower Screws

Figure 4-29: Replacing the Four Lower Screws

3. Replace the four upper screws which secure the backplane housing to the chassis.

4. Reconnect the cabling to the backplane.

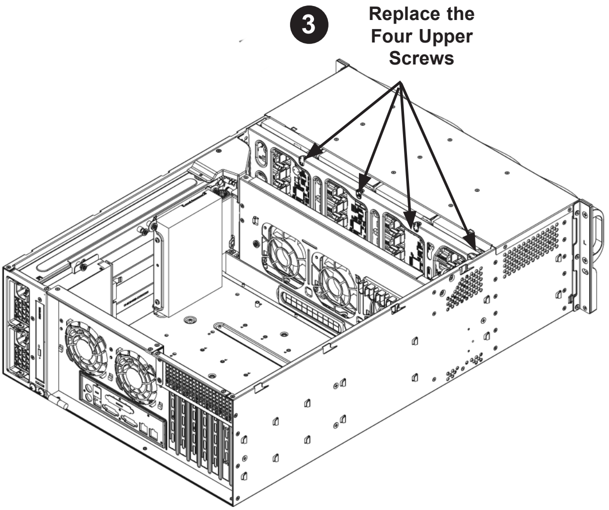

3
Replace the Four Upper Screws

Figure 4-30: Replacing the Three Upper Screws

# Notes

# Chapter 5

# Rack Installation

## 5-1 Overview

This chapter provides a quick setup checklist to install the chassis into a rack. Following these steps in the order given should enable you to have the system installed within a minimal amount of time.

## 5-2 Unpacking the System

You should inspect the box which the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage, you should file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold your chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. The system needs to be placed near a grounded power outlet. Be sure to read the Rack and Server Precautions in the next section.

## 5-3 Preparing for Setup

The box your chassis was shipped in should include two sets of rail assemblies and the mounting screws needed for installing the system into the rack. Also included is an optional square hole to round hole converter bracket, for use in racks with round mounting holes. *Please read this section in its entirety before you begin the installation procedure outlined in the sections that follow*.

### Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).

- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

- This product is for installation only in a Restricted Access Location (dedicated equipment rooms, service closets and the like).

## 5-4 Warnings and Precautions

### Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- In single rack installations, stabilizers should be attached to the rack.
- In multiple rack installations, the racks should be coupled together.
- Always make sure that the rack is stable before extending a component from the rack.
- You should extend only one component at a time - extending two or more simultaneously may cause the rack to become unstable.

### General Server Precautions

- Review the electrical and general safety precautions that came with the components you are adding to your chassis.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest server components on the bottom of the rack first, and then work upwards.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Allow the hot plug hard drives and power supply modules to cool before touching them.
- Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.

## Rack Mounting Considerations

### *Ambient Operating Temperature*

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (TMRA).

### *Reduced Airflow*

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

### *Mechanical Loading*

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

### *Circuit Overloading*

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

### *Reliable Ground*

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.

- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

## 5-6 Rack Mounting Instructions

This section provides information on installing the chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean that the assembly procedure will differ slightly from the instructions provided. You should also refer to the installation instructions that came with the rack unit you are using. **NOTE:** This rail will fit a rack between 26.5" and 36.4" deep.

### Identifying the Sections of the Rack Rails

The chassis package includes two rail assemblies in the rack mounting kit. Each assembly consists of three sections: An inner chassis rail which secures directly to the chassis, an outer rail that secures to the rack, and a middle rail which extends from the outer rail. These assemblies are specifically designed for the left and right side of the chassis.

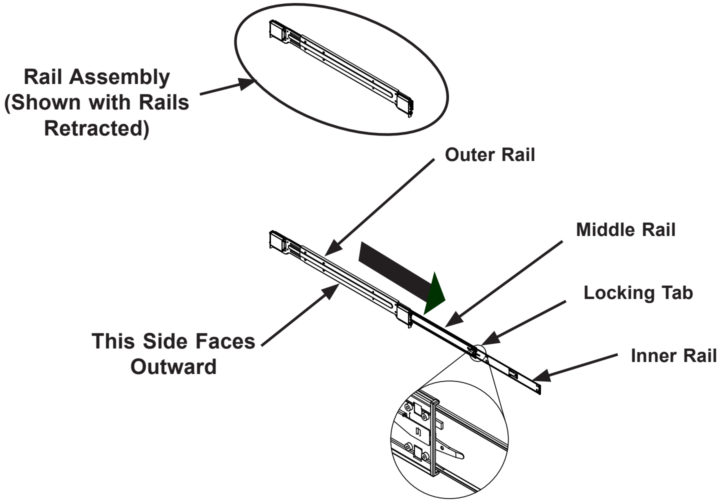

Rail Assembly
(Shown with Rails
Retracted)
Outer Rail
Middle Rail
Locking Tab
Inner Rail
This Side Faces
Outward

Figure 5-1: Identifying the Outer Rail, Middle Rail and Inner Rails
(Left Rail Assembly Shown)

## Locking Tabs

Each inner rail has a locking tab. This tab locks the chassis into place when installed and pushed fully into the rack. These tabs also lock the chassis in place when fully extended from the rack. This prevents the server from coming completely out of the rack when when the chassis is pulled out for servicing.

## Releasing the Inner Rail

***Releasing Inner Rail from the Outer Rails***

1. Identify the left and right outer rail assemblies as described on page 5-4.

2. Pull the inner rail out of the outer rail until it is fully extended as illustrated below.

3. Press the locking tab down to release the inner rail.

4. Pull the inner rail all the way out.

5. Repeat steps 1-3 for the second outer rail.

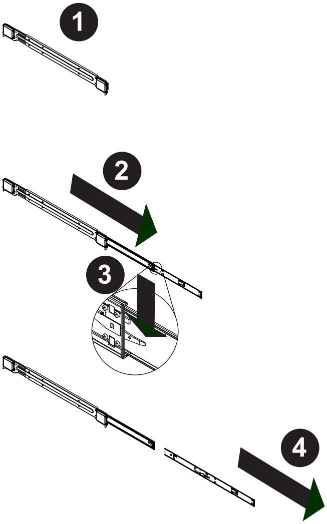


**Figure 5-2: Extending and Releasing the Inner Rail**

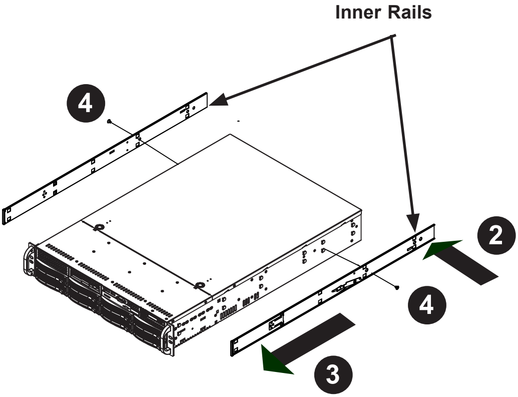


Figure 5-3: Installing the Inner Rails

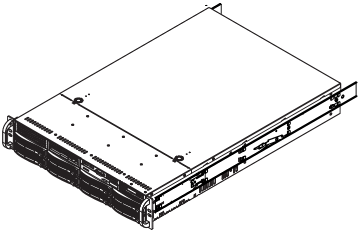


Figure 5-4: Inner Rails Installed on the Chassis
(The chassis above are an example only. Actual chassis may differ slightly)

## Installing The Inner Rails on the Chassis

***Installing the Inner Rails***

1. Confirm that the left and right inner rails have been correctly identified.

2. Place the inner rail firmly against the side of the chassis, aligning the hooks on the side of the chassis with the holes in the inner rail.

3. Slide the inner rail forward toward the front of the chassis until the rail clicks into the locked position, which secures the inner rail to the chassis.

4. Secure the inner rail to the chassis with the screws provided.

5. Repeat steps 1 through 4 above for the other inner rail.

Warning: do not pick up the server with the front handles. They are designed to pull the system from a rack only.

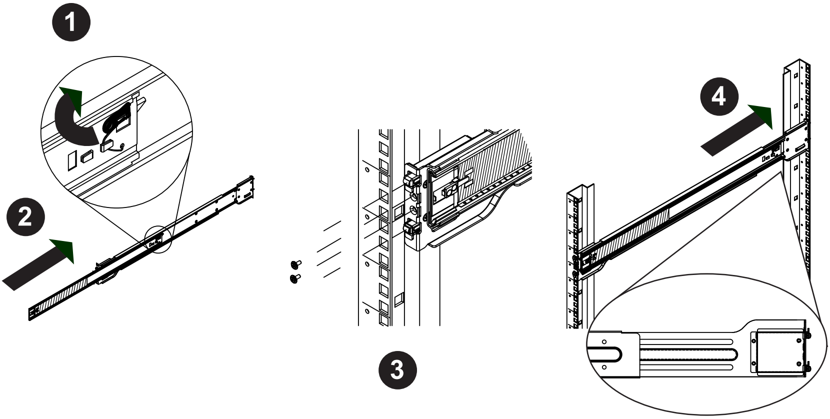


Figure 5-5: Extending and Releasing the Outer Rails

## Installing the Outer Rails on the Rack

***Installing the Outer Rails***

1. Press upward on the locking tab at the rear end of the middle rail.

2. Push the middle rail back into the outer rail.

3. Hang the hooks of the front of the outer rail onto the slots on the front of the rack. If necessary, use screws to secure the outer rails to the rack, as illustrated above.

4. Pull out the rear of the outer rail, adjusting the length until it fits within the posts of the rack.

5. Hang the hooks of the rear portion of the outer rail onto the slots on the rear of the rack. If necessary, use screws to secure the rear of the outer rail to the rear of the rack.

6. Repeat steps 1-5 for the remaining outer rail.

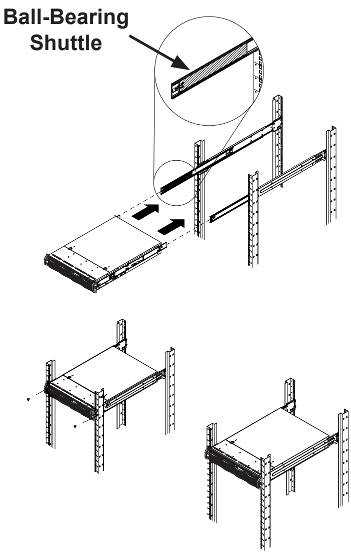


**Figure 5-6: Installing into a Rack**

## Standard Chassis Installation

### *Installing the Chassis into a Rack*

1. Confirm that the inner rails are properly installed on the chassis.

2. Confirm that the outer rails are correctly installed on the rack.

3. Pull the middle rail out from the front of the outer rail and make sure that the ball-bearing shuttle is at the front locking position of the middle rail.

4. Align the chassis inner rails with the front of the middle rails.

5. Slide the inner rails on the chassis into the middle rails, keeping the pressure even on both sides, until the locking tab of the inner rail clicks into the front of the middle rail, locking the chassis into the fully extended position.

6. Depress the locking tabs of both sides at the same time and push the chassis all the way into the rear of the rack.

7. If necessary for security purposes, use screws to secure the chassis handles to the front of the rack.

⚠ Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.

## Optional Quick Installation Method

The following quick installation method may be used to install the chassis onto a rack.

***Installing the Chassis into a Rack***

1. Install the whole rail assembly onto the rack as described on page 5-7.
2. Release the inner rail without retracting the middle rail.
3. Install the inner rails on the chassis as previously described on page 5-6.
4. Install the chassis onto the middle rail as described in the previous section.

# Notes

# Appendix A

# SC846 Cables and Hardware

## A-1 Overview

This appendix lists supported cables for your chassis system. It only includes the most commonly used components and configurations. For more compatible cables, refer to the manufacturer of the motherboard you are using and our Web site at: www.supermicro.com.

## A-2 Cables Included with SC846TQ Chassis (SAS/SATA)

| SC846TQ-R900 | | | |
|---|---|---|---|
| **Part #** | **Type** | **Length** | **Description** |
| CBL-0157L | Cable | 9" | 8-pin to 8-pin ribbon cable for SGPIO, PB free |
| CBL-0087 | Ribbon, Round | 20" | 16-pin to 16-pin ribbon cable for control panel |
| CBL-0160L- | Cable | 6' | Two each, regional power cords |
| CBL-0180L | SATA | varies | Set of four SATA cables. Length varied to minimize airflow interference. |
| CBL-0217L | Cable | | 16-pin control panel converter cable |

| SC846E1-R900B, SC846E2-R900B, SC846E1-R710B, SC846A-R1200B, SC846E1-R1200B, SC846TQ-R1200B, SC846E26-R1200B, SC846E16-R1200B | | | |
|---|---|---|---|
| **Part #** | **Type** | **Length** | **Description** |
| CBL-0087 | Ribbon, Round | 20" | 16-pin to 16-pin ribbon cable for control panel |
| CBL-0160L- | Cable | 6' | two each, regional power cords |
| CBL-0217L | Cable | | 16-pin control panel converter cable |

## A-3 Compatible Cables

These cables are compatible with the SC846 Chassis.

Alternate SAS/SATA Cables

Some compatible motherboards have different connectors. If your motherboard has only one SAS connector that the SAS/SATA cables must share, use one of the following cables. These cables must be purchased separately.

**Cable Name:** SAS Cable **Quantity:** 1

**Part #:** CBL-0175L
**Alt. Name:** "Big Four"

**Description:** This cable has one SFF-8484 (32-pin) connector on one end and four SAS connectors (seven pins each) at the other. This cable connects from the host (motherboard or other controller) to the backplane SAS hard drive port.

**Cable Name:** SAS Cable **Quantity:** 1

**Part #:** CBL-0116
**Alt. Name:** iPass or "Small Four"

**Description:** This cable has one iPass (SFF-8087/Mini-SAS) connector (36-pin) at one end and four SAS connectors on one end. This cable connects from the host (motherboard or other controller) to the backplane SAS hard drive port.

## Extending Power Cables

Although Supermicro chassis are designed with to be efficient and cost-effective, some compatible motherboards have power connectors located in different areas.

To use these motherboards you may have to extend the power cables to the mother boards. To do this, use the following chart as a guide.

**Power Cable Extenders**

| Number of Pins | Cable Part # | Length |
|---|---|---|
| 24-pin | CBL-0042 | 7.9” (20 cm) |
| 20-pin | CBL-0059 | 7.9” (20 cm) |
| 8-pin | CBL-0062 | 7.9” (20 cm) |
| 4-pin | CBL-0060 | 7.9” (20 cm) |

## Front Panel to the Motherboard

The SC846 chassis includes a cable to connect the chassis front panel to the motherboard. If your motherboard uses a different connector, use the following list to find a compatible cable.

**Front Panel to Motherboard Cable (Ribbon Cable)**

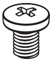
| Number of Pins (Front Panel) | Number of Pins (Motherboard) | Cable Part # |
|---|---|---|
| 16-pin | 16-pin | CBL-0049 |
| 16-pin | 20-pin | CBL-0048 |
| 20-pin | 20-pin | CBL-0047 |
| 16-pin | varies* | CBL-0068 |
| 20-pin | varies* | CBL-0067 |

* Split cables: Use these cables if your motherboard requires several different connections from the front panel.

## A-4 Chassis Screws

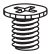
The accessory box includes all the screws needed to set up your chassis. This section lists and describes the most common screws used. Your chassis may not require all the parts listed.

### M/B



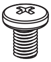
Pan head
6-32 x 5 mm
[0.197]

### HARD DRIVE

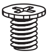


Flat head
6-32 x 5 mm
[0.197]

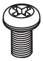
### DVD-ROM, CD-ROM, and FLOPPY DRIVE



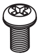
Pan head
6-32 x 5 mm
[0.197]



Flat head
6-32 x 5 mm
[0.197]

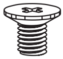


Round head
M3 x 5 mm
[0.197]

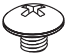


Round head
M2.6 x 5 mm
[0.197]

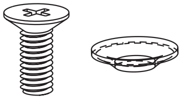
### RAIL



Flat head
M4 x 4 mm
[0.157]

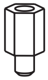


Round head
M4 x 4 mm
[0.157]

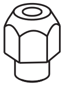


Flat head
M5 x 12 mm[0.472]
Washer for M5

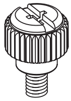
### M/B STANDOFFS



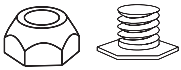
M/B standoff
6-32 to 6-32



M/B (CPU)
standoff
M5 to 6-32



Thumb screw
6-32 x 5 mm
[0.197]



1/U M/B standoff
6-32 x 5 mm
[0.197]

# Appendix B

# SC846 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

| SC846TQ-R900B, SC846E1-R900B and SC846E2-R900B | |
|---|---|
| | **900W** |
| **MFR Part #** | PWS-902-1R |
| **Rated AC Voltage** | 100 - 240V<br>50 - 60Hz<br>3 - 4 Amp |
| **+5V standby** | 4 Amp |
| **+12V** | 75 Amp |
| **+5V** | 50 Amp |
| **+3.3V** | 30 Amp |
| **-12V** | 0.6 Amp |

| SC846E1-R710B | |
|---|---|
| | **710W** |
| **MFR Part #** | PWS-711-1R |
| **DC Input Voltage** | Voltage Range = -36V to -75V (24A - 11A)<br>Nominal Voltage = -48V |
| **+5V standby** | 4 Amp |
| **+12V** | 59 Amp |
| **+5V** | 30 Amp |
| **+3.3V** | 20 Amp |
| **-12V** | 0.6 Amp |

| SC846E16-R200B, SC846E26-R1200B, SC846TQ-R1200B, SC846A-R1200B | |
|---|---|
| | **1200W** |
| **MFR Part #** | PWS-1K21P-1R |
| **AC Input** | 100 - 140V, 50 - 60Hz, 8 - 11.5 Amp<br>180 - 240V, 50 - 60Hz, 5.5 - 8 Amp |
| **DC Output +12V** | 1000W, 83 Amp @ 100-140V<br>1200W, 100 Amp @ 180-240V<br>5Vsb: 4A |
| **DC Output with PDB** | +5V: 50 Amp<br>+3.3V: 30 Amp<br>-12V: 0.6 Amp |
| **Certification** | 80 PLUS Gold Certified |

# Appendix C

# SAS-846TQ Backplane Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

## C-1 ESD Safety Guidelines

Electriostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the backplane by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the card and peripherals back into their antistatic bags when not in use.

## C-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

## C-3 A Note to Users

All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

## C-4 Introduction to the SAS-846TQ Backplane

The SAS-846TQ backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects SAS-846TQ Revision 1.00, the most current release available at the time of publication. Always refer to the Supermicro Web site at www.supermicro.com for the latest updates, compatible parts and supported configurations.

## C-4 Front Connectors and Jumpers

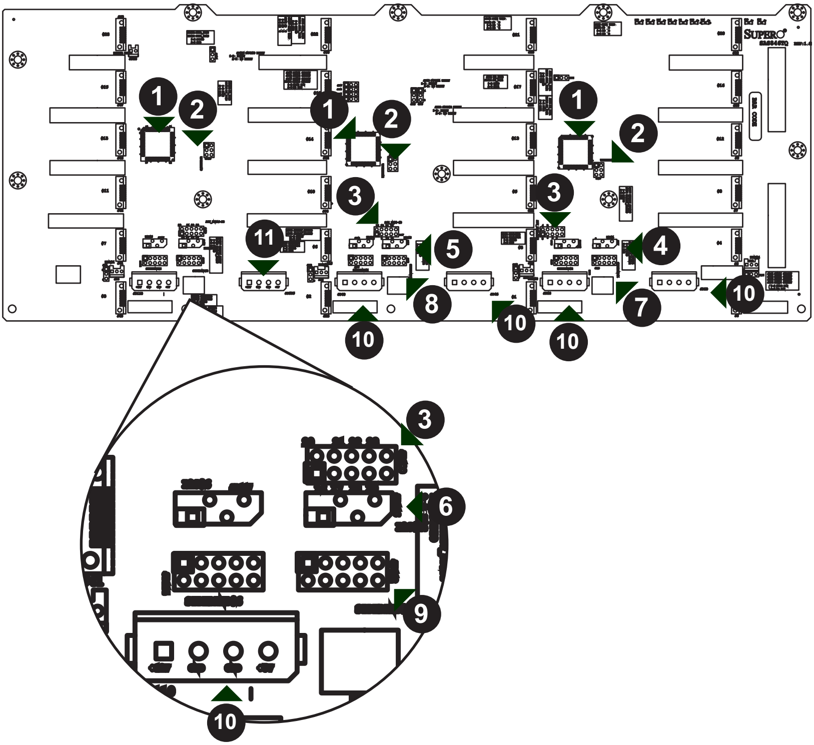
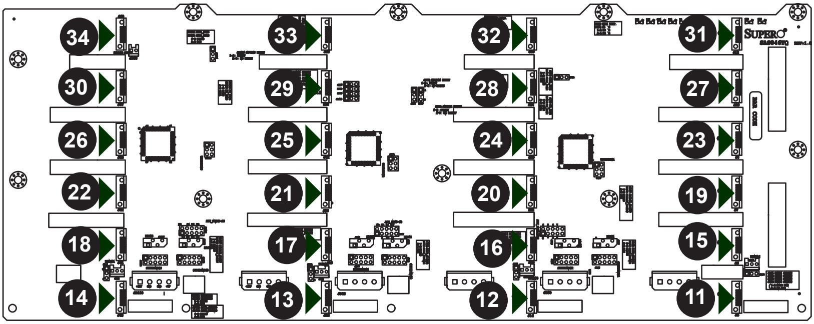


Figure C-1: Front Connectors

### Front Connectors

1. Chip: MG 9072
2. Upgrade Connectors: JP69, JP78 and JP115
3. ACT_IN: JP26, JP47, and JP108
4. I$^2$C Connector #1 (JP37) and #2 (JP95)
5. I$^2$C Connector #3 (JP52) and #4 (JP96)
6. I$^2$C Connector #5 (JP116) and #6 (JP117)
7. Sideband Connector #1 (JP66) and #2 (JP68)
8. Sideband Connector #3 (JP75) and #4 (JP77)
9. Sideband Connector #5 (JP112) and #6 (JP114)
10. Power Connectors (4-pin): JP10, JP13, JP46, JP48, JP109, and JP110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23
22
21
20
19
18
17
16
15
14
13
12
11
SUPERO

**Figure C-2: SAS Ports**

11. SAS Port #0 J5
12. SAS Port #1 J14
13. SAS Port #2 J26
14. SAS Port #3 J40
15. SAS Port #4 J6
16. SAS Port #5 J16
17. SAS Port #6 J29
18. SAS Port #7 J41
19. SAS Port #8 J7
20. SAS Port #9 J22
21. SAS Port #10 J30
22. SAS Port #11 J42
23. SAS Port #12 J8
24. SAS Port #13 J23
25. SAS Port #14 J32
26. SAS Port #15 J46
27. SAS Port #16 J10
28. SAS Port #17 J24
29. SAS Port #18 J38
30. SAS Port #19 J47
31. SAS Port #20 J12
32. SAS Port #21 J25
33. SAS Port #22 J39
34. SAS Port #23 J48

## C-5 Front Connector and Pin Definitions

### 1. MG9072 Chip

The MG9072 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.

### 2. Upgrade Connectors

The upgrade connectors are designated JP69, JP78, and JP115 and are used for manufacturer's diagnostic purposes only.

### 3. Activity LED Header

The activity LED header, designated JP26, JP47 and JP108, is used to indicate the activity status of each SAS drive. The Activity LED Header is located on the front panel. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

### 4. - 6. I$^2$C Connectors

The I$^2$C Connectors, designated JP37, JP95, JP52, JP96, JP116, and JP117, are used to monitor HDD activity and status. See the table on the right for pin definitions.

**I$^2$C Connector Pin Definitions**

| Pin# | Definition |
|---|---|
| 1 | Data |
| 2 | Ground |
| 3 | Clock |
| 4 | No Connection |

## 7. - 9. Sideband Headers

The sideband headers are designated JP66, JP68, JP75, JP77, JP112, and JP114. For SES-2 to work properly, you must connect an 8-pin sideband cable. See the table to the right for pin definitions.

NOTE: SGPIO is the default setting for this backplane.

**Sideband Headers**

| Pin # | Definition | Pin # | Definition |
|---|---|---|---|
| 2 | **SGPIO:** SDIN<br>**I$^2$C:** Backplane Addressing (SB5) | 1 | Controller ID (SB6) |
| 4 | **SGPIO:** SDOUT<br>**I$^2$C:** Reset (SB4) | 3 | GND (SB2) |
| 6 | GND (SB3) | 5 | **SGPIO:** SLOAD<br>**I$^2$C:**SDA (SB1) |
| 8 | Backplane ID (SB7) | 7 | **SGPIO:** SCLOCK<br>**I$^2$C:**SCL (SB0) |
| 10 | No Connection | 9 | No Connection |

## 10. Backplane Main Power Connectors

The 4-pin connectors, designated JP10, JP13, JP46, JP48, JP109, and JP110, provide power to the backplane. See the table on the right for pin definitions.

**Backplane Main Power 4-Pin Connector**

| Pin# | Definition |
|---|---|
| 1 | +12V |
| 2 and 3 | Ground |
| 4 | +5V |

## 11 - 34. SAS Ports

The SAS ports are used to connect the SAS drive cables. The twenty-four ports are designated #0 - #23. Each port is also compatible with SATA drives.

## C-6 Front Jumper Locations and Pin Definitions

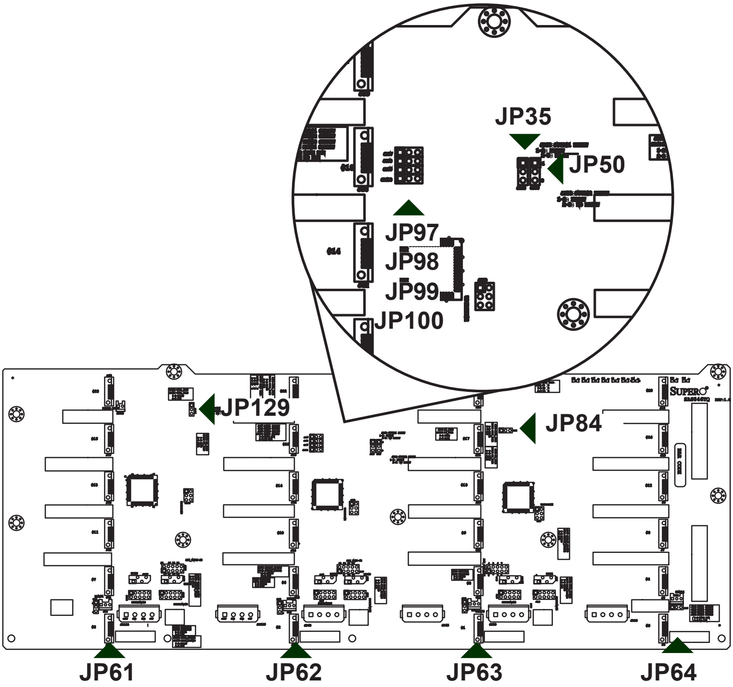
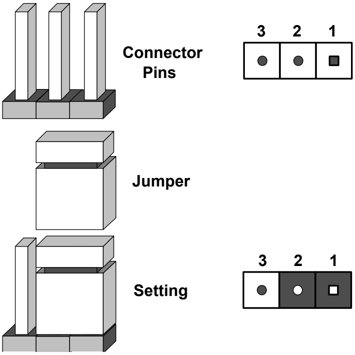

JP35
JP50
JP97
JP98
JP99
JP100
JP129
JP84
JP61
JP62
JP63
JP64

Figure C-3: Front Jumpers

### Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.


3 2 1
Connector Pins
Jumper
Setting
3 2 1

| Jumper Settings | | |
|---|---|---|
| **Jumper** | **Jumper Settings** | **Note** |
| JP35 | 1-2: Reset<br>2-3: Default | MG 9072 chip reset #1 |
| JP50 | 1-2: Reset<br>2-3: Default | MG 9072 chip reset #2 |
| JP129 | 1-2: Reset<br>2-3: Default | MG 9072 chip reset #3 |

## Fan Jumper Settings

This backplane can use up to four fans. To utilize each fan, you must configure **both jumpers** as instructed below.

| Fan Jumper Settings | | |
|---|---|---|
| **Jumper** | **Jumper Settings** | **Note** |
| JP61 | 1-2: With fan (default)<br>2-3: No fan | FAN#1 |
| JP97 | 1-2: With fan (default)<br>2-3: No fan | FAN#1 |
| JP62 | 1-2: With fan (default)<br>2-3: No fan | FAN#2 |
| JP98 | 1-2: With fan (default)<br>2-3: No fan | FAN#2 |
| JP63 | 1-2: With fan (default)<br>2-3: No fan | FAN#3 |
| JP99 | 1-2: With fan (default)<br>2-3: No fan | FAN#3 |
| JP64 | 1-2: With fan (default)<br>2-3: No fan | FAN#4 |
| JP100 | 1-2: With fan (default)<br>2-3:No fan | FAN#4 |

## I$^2$C and SGPIO Modes and Jumper Settings

This backplane can utilize I$^2$C or SGPIO. SGPIO is the default mode and can be used without making changes to your jumper. The following information details which jumper must be configured to use SGPIO mode or restore your backplane to I$^2$C mode.

| **SGPIO Setting (Default)** | | |
|---|---|---|
| **Jumper** | **Jumper Setting** | **Note** |
| JP84 | 1-2 | SGPIO mode setting |

| **I$^2$C Setting** | | |
|---|---|---|
| **Jumper** | **Jumper Setting** | **Note** |
| JP84 | 2-3 | I$^2$C setting |

## Front LED Indicators

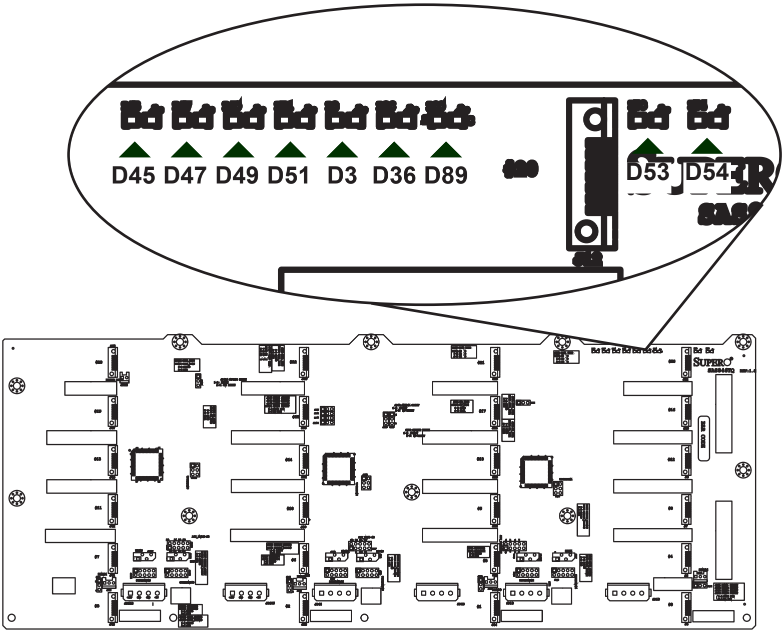


Figure C-4: Front LEDs

| Front Panel LEDs | | |
|---|---|---|
| **LED** | **State** | **Specification** |
| D45 | On | Failure in Fan #1 |
| D47 | On | Failure in Fan #2 |
| D49 | On | Failure in Fan #3 |
| D51 | On | Failure in Fan #4 |
| D3 | On | Alarm #1: Overheat/drive failure in Channel 1 |
| D36 | On | Alarm #2: Overheat/drive failure in Channel 2 |
| D89 | On | Alarm #3: Overheat/drive failure in Channel 3 |
| D53 | Off | +5V: Backplane power failure. Light is on during normal operation. |
| D54 | Off | +12V: Backplane power failure. Light is on during normal operation. |

## C-7 Rear Connectors and LED Indicators

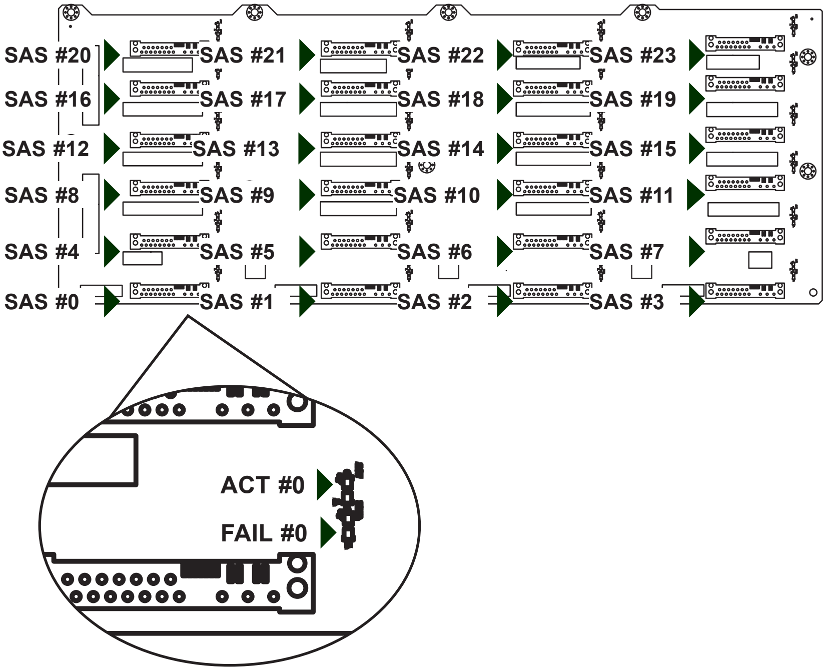

SAS #20
SAS #21
SAS #22
SAS #23
SAS #16
SAS #17
SAS #18
SAS #19
SAS #12
SAS #13
SAS #14
SAS #15
SAS #8
SAS #9
SAS #10
SAS #11
SAS #4
SAS #5
SAS #6
SAS #7
SAS #0
SAS #1
SAS #2
SAS #3
ACT #0
FAIL #0

Figure C-5: Rear Connectors and LEDs

| Rear SAS/SATA Connectors | | | |
|---|---|---|---|
| **Rear Connector** | **SAS Drive Number** | **Rear Connector** | **SAS Drive Number** |
| SAS #0 | SAS/SATA HDD #0 | SAS #12 | SAS/SATA HDD #12 |
| SAS #1 | SAS/SATA HDD #1 | SAS #13 | SAS/SATA HDD #13 |
| SAS #2 | SAS/SATA HDD #2 | SAS #14 | SAS/SATA HDD #14 |
| SAS #3 | SAS/SATA HDD #3 | SAS #15 | SAS/SATA HDD #15 |
| SAS #4 | SAS/SATA HDD #4 | SAS #16 | SAS/SATA HDD #16 |
| SAS #5 | SAS/SATA HDD #5 | SAS #17 | SAS/SATA HDD #17 |
| SAS #6 | SAS/SATA HDD #6 | SAS #18 | SAS/SATA HDD #18 |
| SAS #7 | SAS/SATA HDD #7 | SAS #19 | SAS/SATA HDD #19 |
| SAS #8 | SAS/SATA HDD #8 | SAS #20 | SAS/SATA HDD #20 |
| SAS #9 | SAS/SATA HDD #9 | SAS #21 | SAS/SATA HDD #21 |
| SAS #10 | SAS/SATA HDD #10 | SAS #22 | SAS/SATA HDD #22 |
| SAS #11 | SAS/SATA HDD #11 | SAS #23 | SAS/SATA HDD #23 |

| Rear LED Indicators | | |
|---|---|---|
| **Rear LED** | **Hard Drive Activity** | **Failure LED** |
| SAS #0 | D12 | D5 |
| SAS #1 | D22 | D23 |
| SAS #2 | D40 | D37 |
| SAS #3 | D102 | D107 |
| SAS #4 | D13 | D6 |
| SAS #5 | D24 | D29 |
| SAS #6 | D41 | D38 |
| SAS #7 | D104 | D108 |
| SAS #8 | D14 | D7 |
| SAS #9 | D25 | D30 |
| SAS #10 | D42 | D39 |
| SAS #11 | D106 | D109 |
| SAS #12 | D15 | D8 |
| SAS #13 | D26 | D31 |
| SAS #14 | D87 | D88 |
| SAS #15 | D111 | D110 |
| SAS #16 | D18 | D19 |
| SAS #17 | D27 | D32 |
| SAS #18 | D100 | D103 |
| SAS #19 | D118 | D119 |
| SAS #20 | D21 | D20 |
| SAS #21 | D28 | D33 |
| SAS #22 | D101 | D105 |
| SAS #23 | D120 | D121 |

# Appendix D

# SAS-846EL Backplane Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

## D-1 ESD Safety Guidelines

*Electrotatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.*

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the backplane by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the backplane and peripherals back into their antistatic bags when not in use.

## D-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

## D-3 An Important Note to Users

All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

## D-4 Introduction to the SAS-846EL Backplane

The SAS-846EL backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects SAS-846EL Revision 1.01, the most current release available at the time of publication. Always refer to the Supermicro Web site at www.supermicro.com for the latest updates, compatible parts and supported configurations.

## D-5 Front Connectors and Jumpers

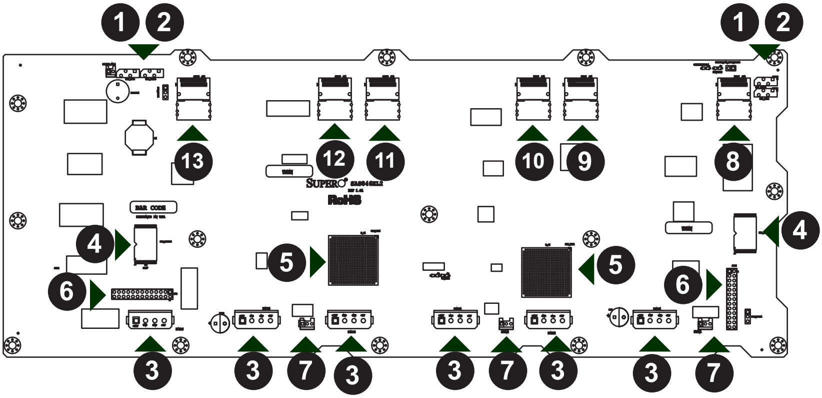


Figure D-1: Front Connectors

### Front Connectors

1. and 2. Primary and secondary I$^2$C connectors (optional)

3. Power connectors: PWR1, PWR2, PWR3, PWR4, PWR5, and PWR6

4. Primary and secondary flash chip

5. Primary and secondary expander chip

6. EPP connectors: J24 and J25

7. Fan connectors: Fan1, Fan2, and Fan3

8. SAS connector: PRI_J0

9. SAS connector: PRI_J1

10. SAS connector: PRI_J2

11. SAS connectors SEC_J0 (not available in EL1 single port backplane)

12. SAS connector: SEC_J1 (not available in EL1 single port backplane)

13. SAS connector: SEC_J2 (not available in EL1 single port backplane)

## D-6 Front Connector and Pin Definitions

### 1. and 2. Optional Primary and Secondary I²C Connectors

The optional I²C connectors are connected to the CSE-PTJBOD-CB2 board and are used to monitor the power supply status and to control the fans. See the table on the right for pin definitions.

**I²C Connector Pin Definitions**

| Pin# | Definition |
|---|---|
| 1 | Data |
| 2 | Ground |
| 3 | Clock |
| 4 | No Connection |

### 3. Backplane Main Power Connectors

The 4-pin connectors, designated PWR1, PWR2, PWR3, PWR4, PWR5, and PWR6, provide power to the backplane. See the table on the right for pin definitions.

**Backplane Main Power 4-Pin Connector**

| Pin# | Definition |
|---|---|
| 1 | +12V |
| 2 and 3 | Ground |
| 4 | +5V |

### 4. Primary and Secondary Flash Chips

The primary and secondary flash chips enhance the backplane memory.

### 5. Primary and Secondary Expander Chips

This primary and secondary expander chips allow the backplane to support dual ports, cascading, and failover.

### 6. EPP Ports

The EPP ports are used for manufacturer diagnostic purposes only.

## 7. Fan Connectors

The 3-pin connectors, designated FAN1, FAN2, and FAN3, provide power to the fans. See the table on the right for pin definitions.

**Fan Connectors**

| Pin# | Definition |
|---|---|
| 1 | Ground |
| 2 | +12V |
| 3 | Tachometer |

## 8 - 13. SAS Ports

The primary and secondary sets of SAS ports provide expander features including cascading and failover From right to left the ports are primary 1/2/3 and secondary 1/2/3.

## D-7 Front Jumper Locations and Pin Definitions

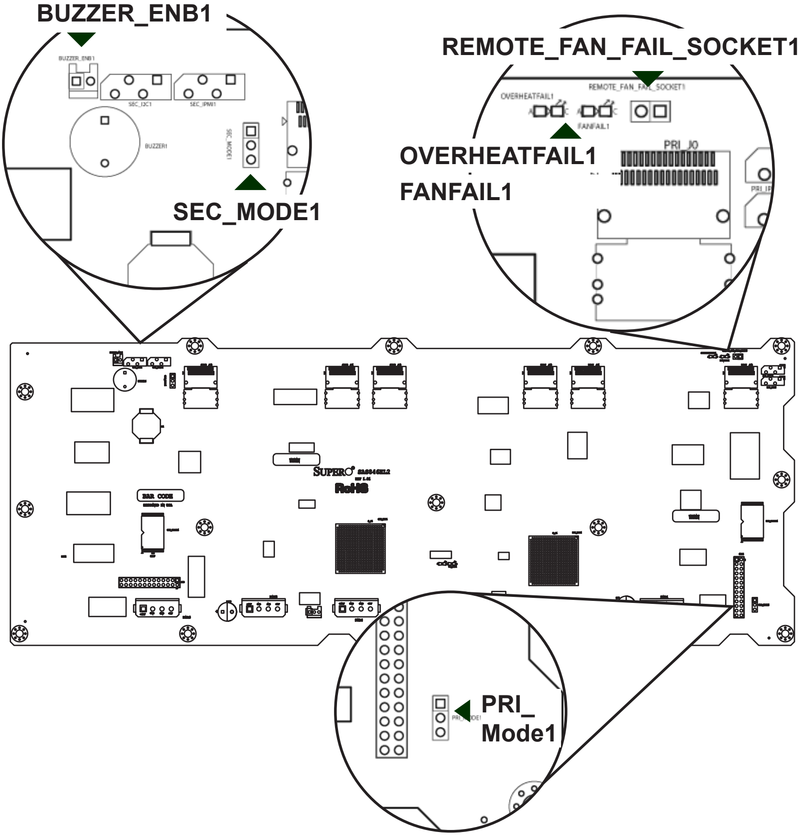
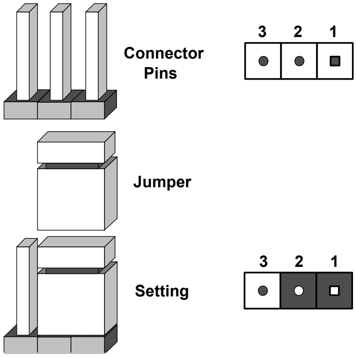

BUZZER_ENB1
REMOTE_FAN_FAIL_SOCKET1
OVERHEATFAIL1
FANFAIL1
SEC_MODE1
PRI_
Mode1

Figure D-2: Front Jumper Locations and Pin Defimitions

### Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.


3 2 1
Connector
Pins
Jumper
Setting
3 2 1

| General Jumper Settings | | |
|---|---|---|
| **Jumper** | **Jumper Settings** | **Note** |
| PRI_MODE1 | 1-2 | Factory Setting<br>Do not change |
| SEC_MODE1 | 1-2 | Factory Setting<br>Do not change |
| BUZZER_ENB1 | Open: Disable<br>Closed: Enable | Buzzer Enable* |

*The buzzer sound indicates that a condition requiring immediate attention has occurred.

***The buzzer alarm is triggered by the following conditions:***

1. Hard drive failure

2. Fan failure

3. System temperature over 45º Celsius.

| Socket Settings | | |
|---|---|---|
| **Socket** | **Socket Setting** | **Note** |
| REMOTE_FAN_FAIL_ SOCKET | Connected | Front Panel Fan Fail indicator (Optional) |

| Front Panel LEDs | | |
|---|---|---|
| **LED** | **State** | **Specification** |
| OVERHEATFAIL1 | On | Overheat/Drive Failure LED Indicator (Red light: flashing, Buzzer: On) |
| FANFAIL1 | On | Fan #1 failure |

## D-8 Rear Connectors and LED Indicators

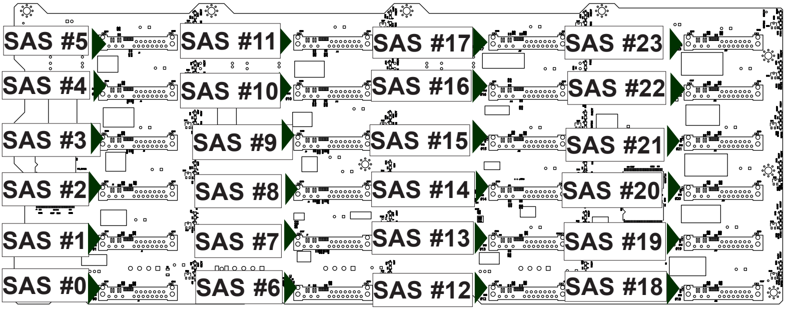

SAS #5
SAS #11
SAS #17
SAS #23
SAS #4
SAS #10
SAS #16
SAS #22
SAS #3
SAS #9
SAS #15
SAS #21
SAS #2
SAS #8
SAS #14
SAS #20
SAS #1
SAS #7
SAS #13
SAS #19
SAS #0
SAS #6
SAS #12
SAS #18

Figure D-3: Rear Connectors

| Rear SAS/SATA Connectors | | | |
|---|---|---|---|
| **Rear Connector** | **SAS Drive Number** | **Rear Connector** | **SAS Drive Number** |
| SAS #0 | SAS/SATA HDD #0 | SAS #12 | SAS/SATA HDD #12 |
| SAS #1 | SAS/SATA HDD #1 | SAS #13 | SAS/SATA HDD #13 |
| SAS #2 | SAS/SATA HDD #2 | SAS #14 | SAS/SATA HDD #14 |
| SAS #3 | SAS/SATA HDD #3 | SAS #15 | SAS/SATA HDD #15 |
| SAS #4 | SAS/SATA HDD #4 | SAS #16 | SAS/SATA HDD #16 |
| SAS #5 | SAS/SATA HDD #5 | SAS #17 | SAS/SATA HDD #17 |
| SAS #6 | SAS/SATA HDD #6 | SAS #18 | SAS/SATA HDD #18 |
| SAS #7 | SAS/SATA HDD #7 | SAS #19 | SAS/SATA HDD #19 |
| SAS #8 | SAS/SATA HDD #8 | SAS #20 | SAS/SATA HDD #20 |
| SAS #9 | SAS/SATA HDD #9 | SAS #21 | SAS/SATA HDD #21 |
| SAS #10 | SAS/SATA HDD #10 | SAS #22 | SAS/SATA HDD #22 |
| SAS #11 | SAS/SATA HDD #11 | SAS #23 | SAS/SATA HDD #23 |

| Rear LED Indicators | | |
|---|---|---|
| **Rear Connector** | **Hard Drive Activity LED** | **Failure LED** |
| SAS #0 | ACT #0 | FAIL #0 |
| SAS #1 | ACT #1 | FAIL #1 |
| SAS #2 | ACT #2 | FAIL #2 |
| SAS #3 | ACT #3 | FAIL #3 |
| SAS #4 | ACT #4 | FAIL #4 |
| SAS #5 | ACT #5 | FAIL #5 |
| SAS #6 | ACT #6 | FAIL #6 |
| SAS #7 | ACT #7 | FAIL #7 |
| SAS #8 | ACT #8 | FAIL #8 |
| SAS #9 | ACT #9 | FAIL #9 |
| SAS #10 | ACT #10 | FAIL #10 |
| SAS #11 | ACT #11 | FAIL #11 |
| SAS #12 | ACT #12 | FAIL #12 |
| SAS #13 | ACT #13 | FAIL #13 |
| SAS #14 | ACT #14 | FAIL #14 |
| SAS #15 | ACT #15 | FAIL #15 |
| SAS #16 | ACT #16 | FAIL #16 |
| SAS #17 | ACT #17 | FAIL #17 |
| SAS #18 | ACT #18 | FAIL #18 |
| SAS #19 | ACT #19 | FAIL #19 |
| SAS #20 | ACT #20 | FAIL #20 |
| SAS #21 | ACT #21 | FAIL #21 |
| SAS #22 | ACT #22 | FAIL #22 |
| SAS #23 | ACT #23 | FAIL #23 |

## D-9 Dual Port and Cascading Configurations

The following section contains cascading configurations for the SC846EL1 and SC846EL2 backplanes.

## D-10 Single and Dual Port Expanders

### Single Ports

SAS-846EL1 backplanes have a single-port expander that access all twenty-four drives and supports cascading.

### Dual Ports

SAS-846EL2 backplanes have dual-port expanders that access all twenty-four drives. These dual-port expanders support cascading, failover, and multipath.

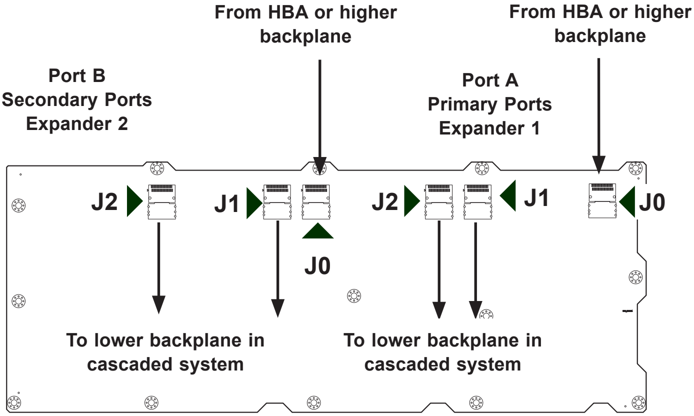

From HBA or higher backplane
From HBA or higher backplane
Port B
Secondary Ports
Expander 2
Port A
Primary Ports
Expander 1
J2
J1
J0
J2
J1
J0
To lower backplane in cascaded system
To lower backplane in cascaded system

Figure D-4: SAS-846EL2 Dual Port Configuration

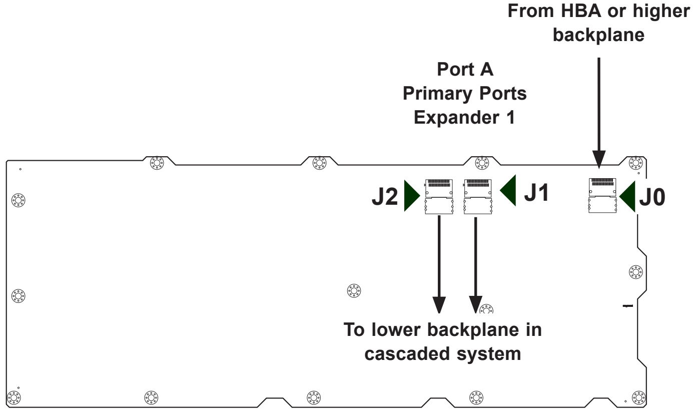

From HBA or higher backplane
Port A
Primary Ports
Expander 1
J2
J1
J0
To lower backplane in cascaded system

Figure D-5: SAS-846EL1 Single Port Configuration

## D-11 Failover

The SAS-846EL2 backplane has two expanders which allow effective failover.

### Single Host Bus Adapter

In a single host bus configuration, the backplane connects to one Host Bus Adapter (HBA).

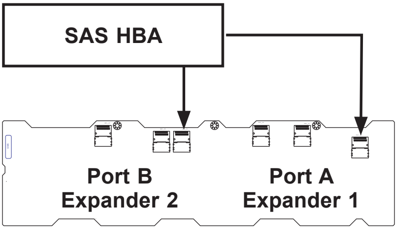

SAS HBA
Port B
Expander 2
Port A
Expander 1

Figure D-6: Single HBA

### Single Host Bus Adapter Failover

If the expander or data path in Port A fails, the system automatically switches to Port B.

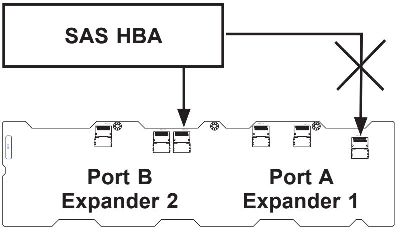

SAS HBA
Port B
Expander 2
Port A
Expander 1

Figure D-7: Single HBA Failover

## D-12 Failover with RAID Cards and Multiple HBAs

The SAS-836EL backplane may be configured for failover with multiple HBAs using either RAID controllers or HBAs to acheive failover protection.

**RAID Controllers:** If RAID controllers are used, then the failover is accomplished through port failover on the same RAID card.

**HBAs**: If multiple HBAs are used to achieve failover protection and load balancing, **Linux MPIO software must be installed and correctly configured to perform the load balancing and failover tasks.**

### Dual Host Bus Adapter

In a Dual Host Bus Configuration, the backplane connects to two Host Bus Adapters (HBA).

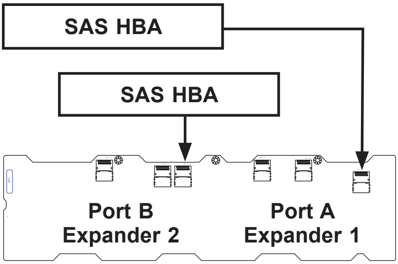


Figure D-8: Dual HBA

### Dual Host Bus Adapter Failover

If the expander or data path in Port A fails, the system automatically switches to Port B. This maintains a full connection to all drives.

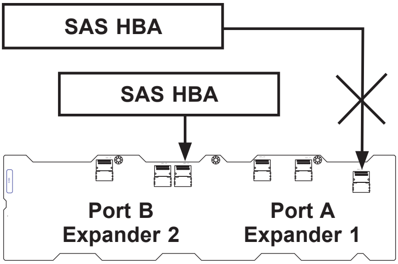


Figure D-9: Dual HBA Failover

IMPORTANT: For RAID controllers, redundancy is achieved through port failover. For multiple HBAs MPIO software is required to achieve failover protection.

# D-13 Chassis Power Card and Support Cables

## Chassis Power Card

In a cascaded configuration, the first chassis includes a motherboard and at least one Host Bus Adapter (HBA). Other servers in this enclosed system, include a power card. This section describes the supported power card for the SAS-846 series backplane.

For more information, see the PCC-JBPWR2 power card manual. This manual can be found at the http://www.supermicro.com or as an appendix in the SAS-846EL chassis manual.

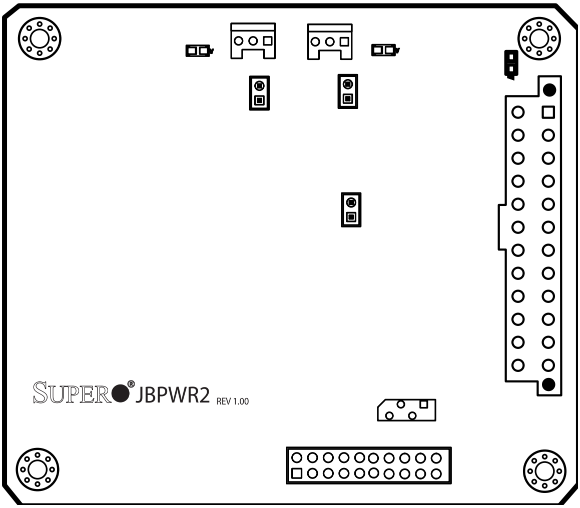


**Figure D-10: Chassis Power Card (Sold Separately)**

| Power Card | | |
|---|---|---|
| **Part Number** | **Part Type** | **Where Used** |
| CSE-PTJBOD-CB1 | Power card | Allows the chassis to be in a JBOD (Just a Bunch of Drives) system. |

## Connecting an Internal Host Bus Adapter to the Backplane

The following section lists the most common cables used to connect the Host Bus Adapter (HBA) to the backplane.

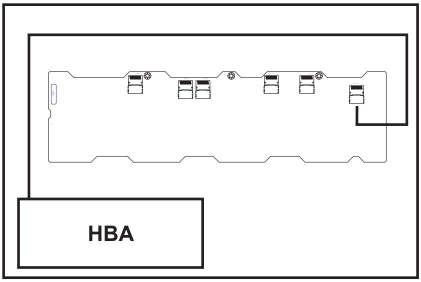


Figure D-11: Single Internal Host Bus Adapter

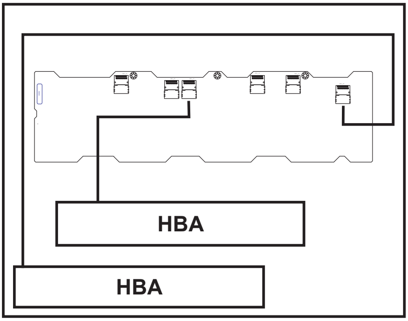


Figure D-12: Dual Internal Host Bus Adapter

**IMPORTANT:** See Section D-12 of this manual, *Failover with RAID Cards and Multiple HBAs* for important information on supported configurations.

## Supported Internal HBA Cables

Use the following listed cables to create connections between the internal HBA and SAS-846EL backplane. The cables required depend on the HBA connector.

**Cable Name:** iPass TO 4-lane

**Part #:** CBL-0117L **Length:** 46 cm (18 inches)

**Description:** This cable has one SFF-8484 (32-pin) connector on one end and iPass (SFF-8087/Mini-SAS) connector (36-pin) at the other. This cable connects from the HBA to the SAS-846EL backplane.

**Cable Name:** iPass (Mini-SAS) to iPass (Mini-SAS)

**Part #:** CBL-0108L-02 **Length:** 39 cm (15 inches)

**Part #:** CBL-0109L-02 **Length:** 22 cm (9 inches)

**Part #:** CBL-0110L-02 **Length:** 18 cm (7 inches)

**Description:** This cable has an iPass (SFF-8087/Mini-SAS) connector (36-pin) at each end. It connects from the HBA to the SAS-846EL backplane.

## Connecting an External Host Bus Adapter to the Backplane

This backplane supports external Host Bus Adapters. In this configuration, the HBA and the backplane are in different physical chassis. This allows a JBOD configuration system to connect to the other system that has a HBA.

### Single External Host Bus Adapter

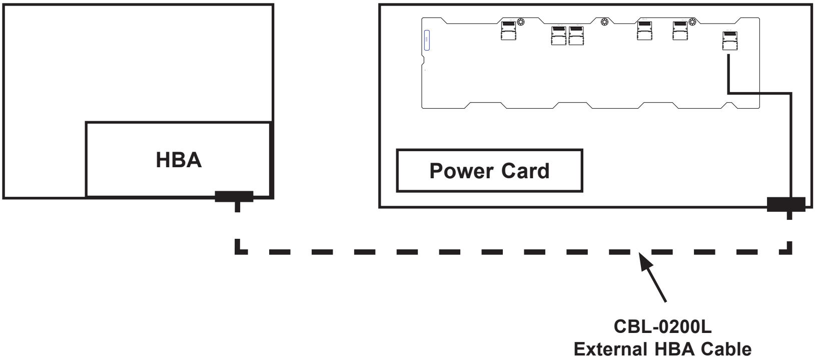

HBA
Power Card
CBL-0200L
External HBA Cable

Figure D-13: Single External Host Adapter

### Dual External Host Bus Adapter

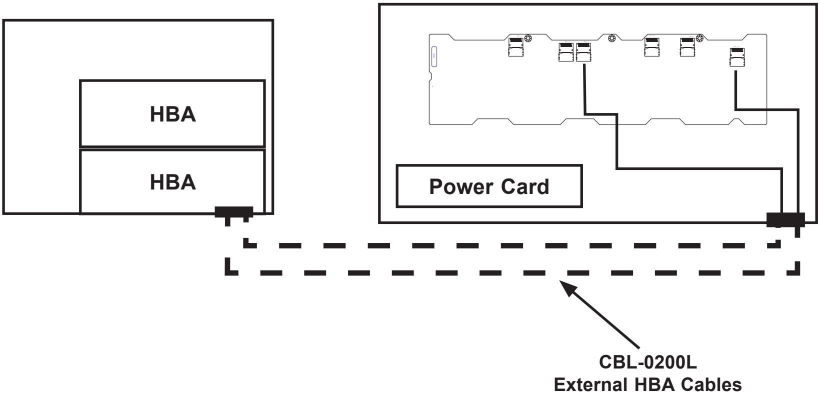

HBA
HBA
Power Card
CBL-0200L
External HBA Cables

Figure D-14: Dual External Host Bus Adapter

**IMPORTANT:** See Section 3-3 of this manual, *Failover with RAID Cards and Multiple HBAs* for important information on supported configurations.

## Supported External HBA to Backplane Cable

Use the following cable if your external HBA has an InfiniBand connector.

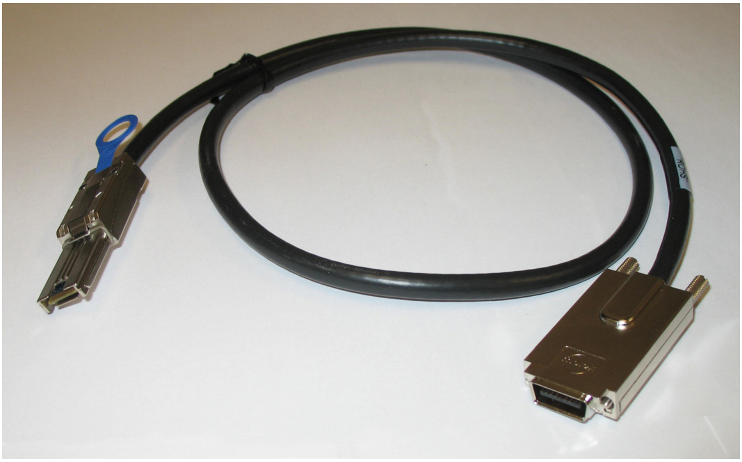


Figure D-15: SAS InfiniBand Cable (CBL-0200L)

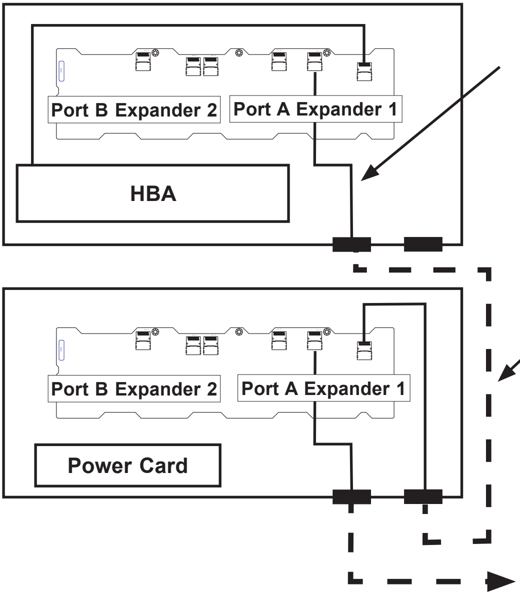
**Cable Name:** SAS InfiniBand to Mini-SAS X4 1M cable, PBF

**Part #:** CBL-0200L **Length:** 1 meter

**Description:** This cable has an InfiniBand connector (SFF-8470) on one end and an SFF-8088-1X (26-pin) at the other end.

## Connecting Multiple Backplanes in a Single Channel Environment

This section describes the cables used when cascading from a single HBA. These connections use CBL-0167L internal cables and CBL-0166L external cables.


Port B Expander 2
Port A Expander 1
HBA
Port B Expander 2
Port A Expander 1
Power Card

**CBL-0167L with Single Port Assembly (internal cable)**

**CBL-0166L (external cable)**

Figure D-16: Single HBA Configuration

## Single HBA Configuration Cables

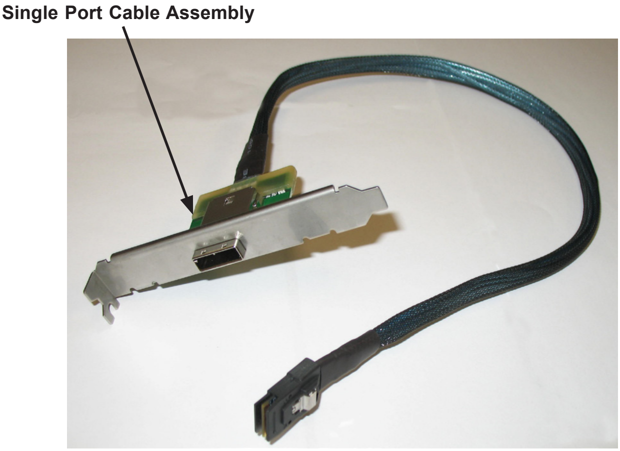


**Figure D-17: Single Port Internal Cable (CBL-0167L)**

**Cable Name:** SAS EL2/EL1 Backplane Cable (Internal) with 2-port Cascading Cable, 68 cm

**Part #:** CBL-0167L (SFF-8087 to SFF-8088 x1)
**Ports:** Single
**Placement:** Internal cable

**Description:** Internal cable. Connects the backplane to the Host Bus Adapter (HBA) or external port. Used in single port environments.

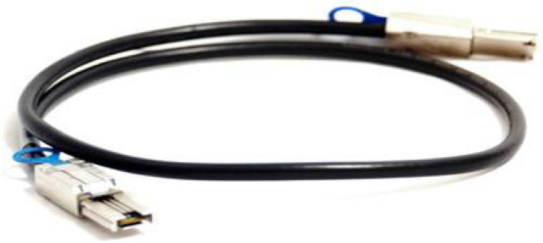


**Figure D-18: External Cable (CBL-0166L)**

**Cable Name:** SAS EL2/EL1 Cascading Cable (External), 68cm

**Part #:** CBL-0166L (SFF-8088 1x to SFF-8088 x1)
**Ports:** Single or Dual
**Placement:** External cable

**Description:** External cascading cable. Connects ports between servers. With most connectors, use one cable for single port connections and two cables for dual port connections.

## Connecting Multiple Backplanes in a Dual Channel Environment

This section describes the cables used when cascading from dual HBAs. These connections use CBL-0168L internal cables and CBL-0166L external cables.

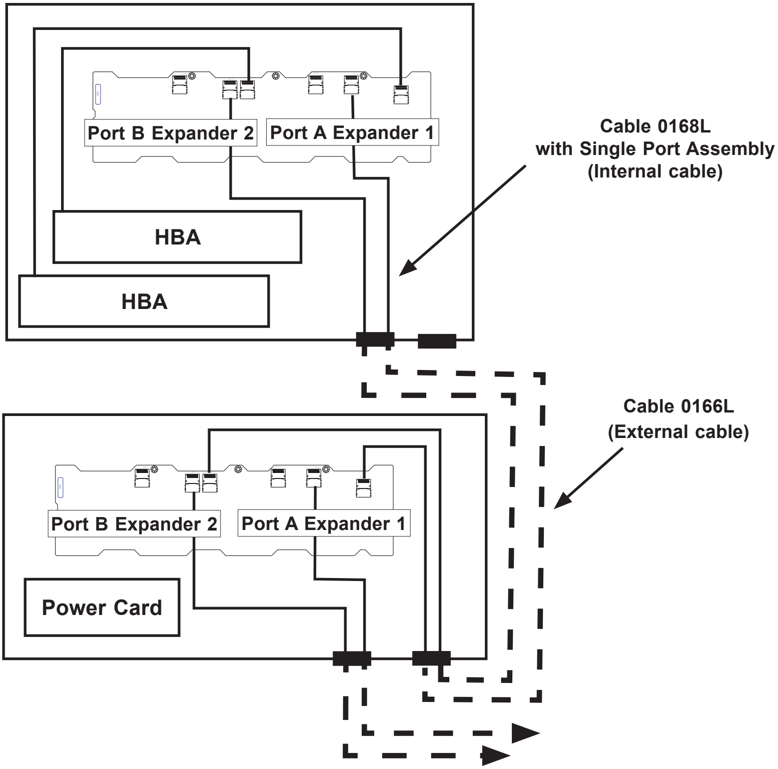

Port B Expander 2
Port A Expander 1
Cable 0168L
with Single Port Assembly
(Internal cable)
HBA
HBA
Cable 0166L
(External cable)
Port B Expander 2
Port A Expander 1
Power Card

Figure D-19: Dual HBA Configuration

**IMPORTANT:** See Section D-12 of this manual, *Failover with RAID Cards and Multiple HBAs* for important information on supported configurations.

## Dual HBA Configuration Cables

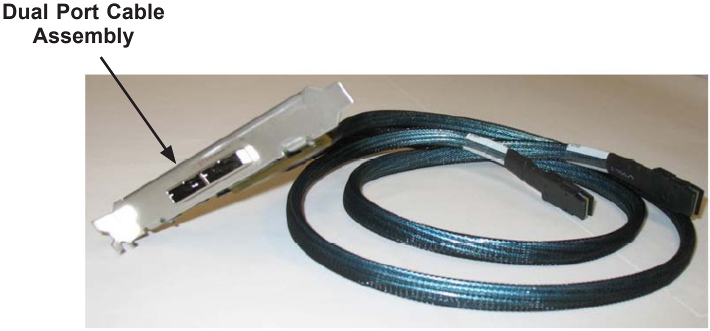


Figure D-20: Dual Port Internal Cable (CBL-0168L)

**Cable Name:** SAS Dual-port Cable Assembly, 68/76 cm

**Part #:** CBL-0168L **Placement:** Internal cable
**Ports:** Dual

**Description:** Internal cascading cable. Connects the backplane to the Host Bus Adapter (HBA) or external port. Used in dual port environments.

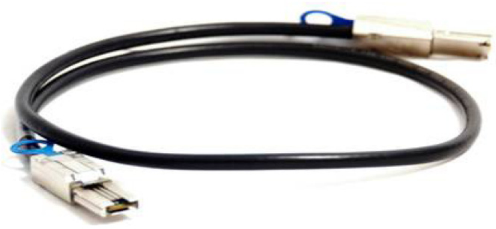


Figure D-21: External Cable (CBL-0166L)

**Cable Name:** SAS EL2/EL1 Cascading Cable (External), 68 cm

**Part #:** CBL-0166L **Placement:** External cable
**Ports:** Single or Dual

**Description:** External cascading cable. Connects ports between servers. Use one cable for single port connections and two cables for dual port connections.

## 3-5 Supported Cascading Configurations

Cascading allows the system to access data at a faster rate by allowing several backplanes to share resources to reduce latency time.

The first backplane in a cascaded system requires a motherboard and HBA. Other servers require a power control card with no motherboard and no HBA. For more information, see the SC846 Chassis Manual available at www.supermicro.com.

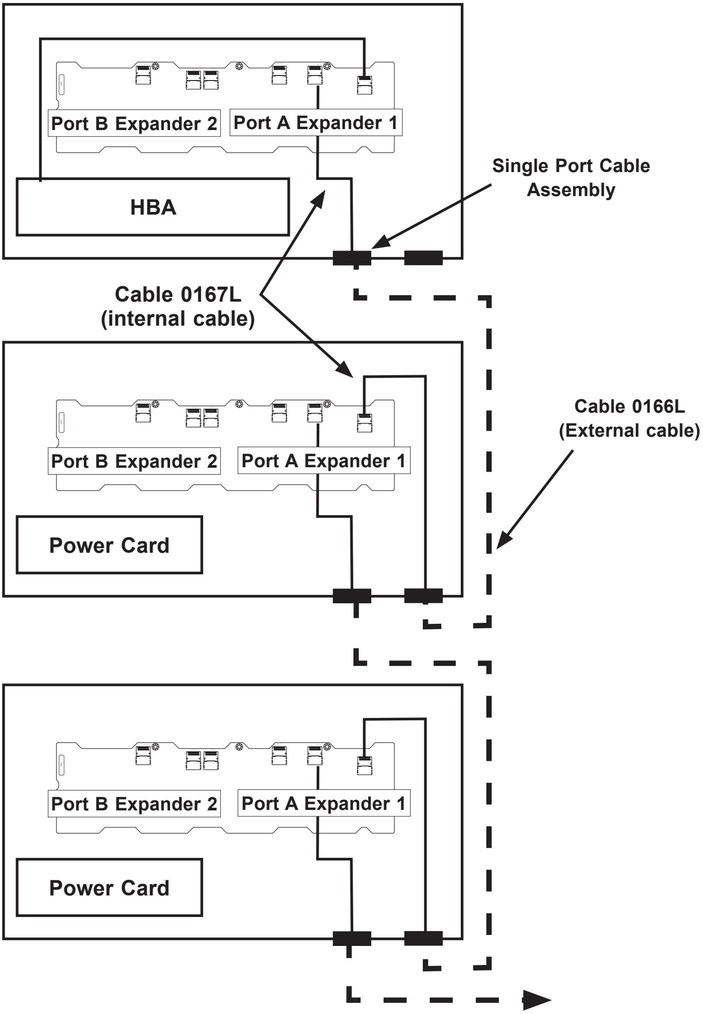

Port B Expander 2
Port A Expander 1
HBA
Single Port Cable Assembly
Cable 0167L (internal cable)
Port B Expander 2
Port A Expander 1
Cable 0166L (External cable)
Power Card
Port B Expander 2
Port A Expander 1
Power Card

Figure D-22: Simple Cascaded Configuration

### Server System with Single SAS HBA

The expanders allow horizontal branching. This configuration also applies to dual ports.

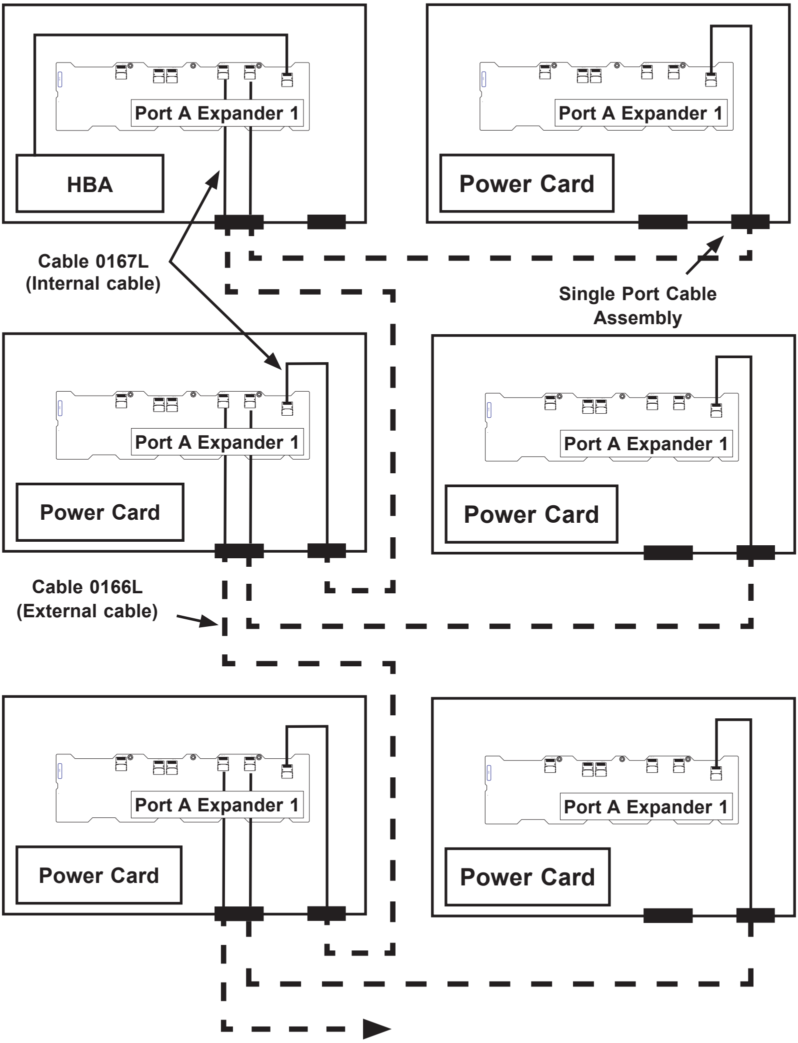

Port A Expander 1
HBA
Port A Expander 1
Power Card
Cable 0167L
(Internal cable)
Single Port Cable
Assembly
Port A Expander 1
Power Card
Port A Expander 1
Power Card
Cable 0166L
(External cable)
Port A Expander 1
Power Card
Port A Expander 1
Power Card

Figure D-23: Cascaded Configuration with Horizontal Branching

## Dual SAS HBA and Cascaded Configuration

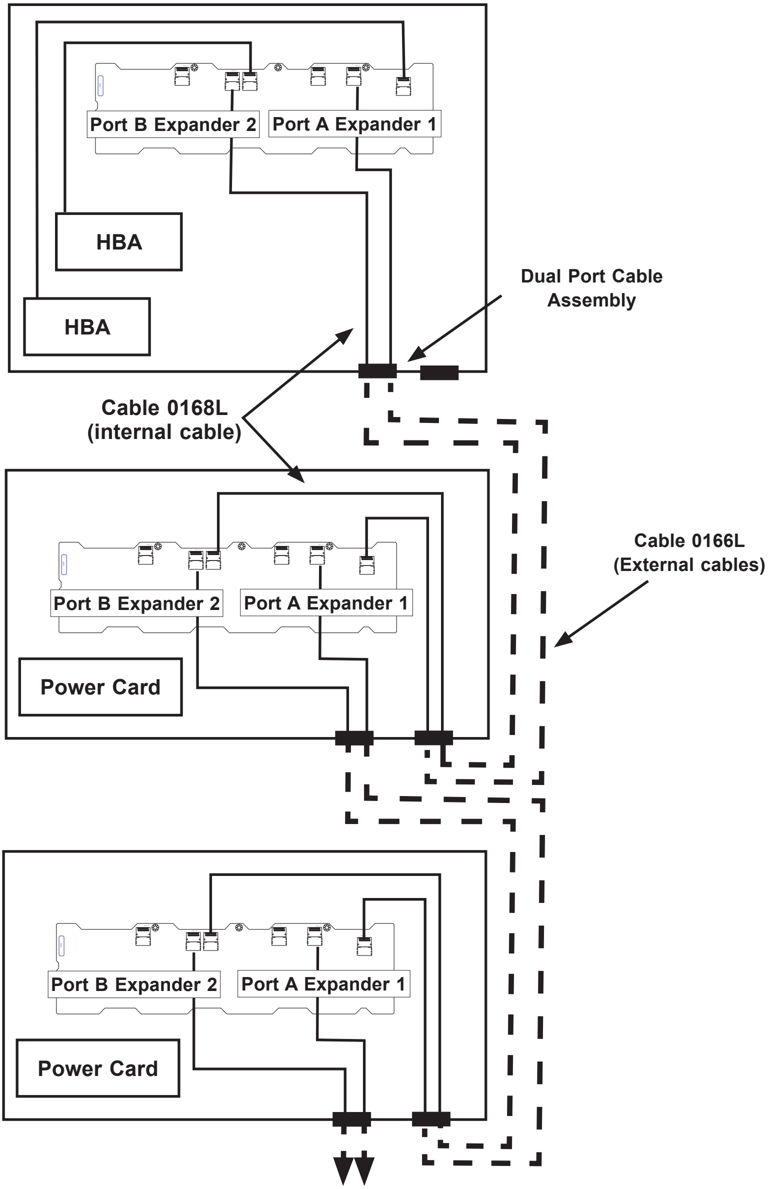

Port B Expander 2
Port A Expander 1
HBA
HBA
Dual Port Cable Assembly
Cable 0168L (internal cable)
Port B Expander 2
Port A Expander 1
Cable 0166L (External cables)
Power Card
Port B Expander 2
Port A Expander 1
Power Card

**Figure D-24: Dual SAS HBA with Cascaded Configuration**

**IMPORTANT:** See Section D-12 of this manual, *Failover with RAID Cards and Multiple HBAs* for important information on supported configurations.

## Dual SAS HBA and Cascaded Configuration with Branching

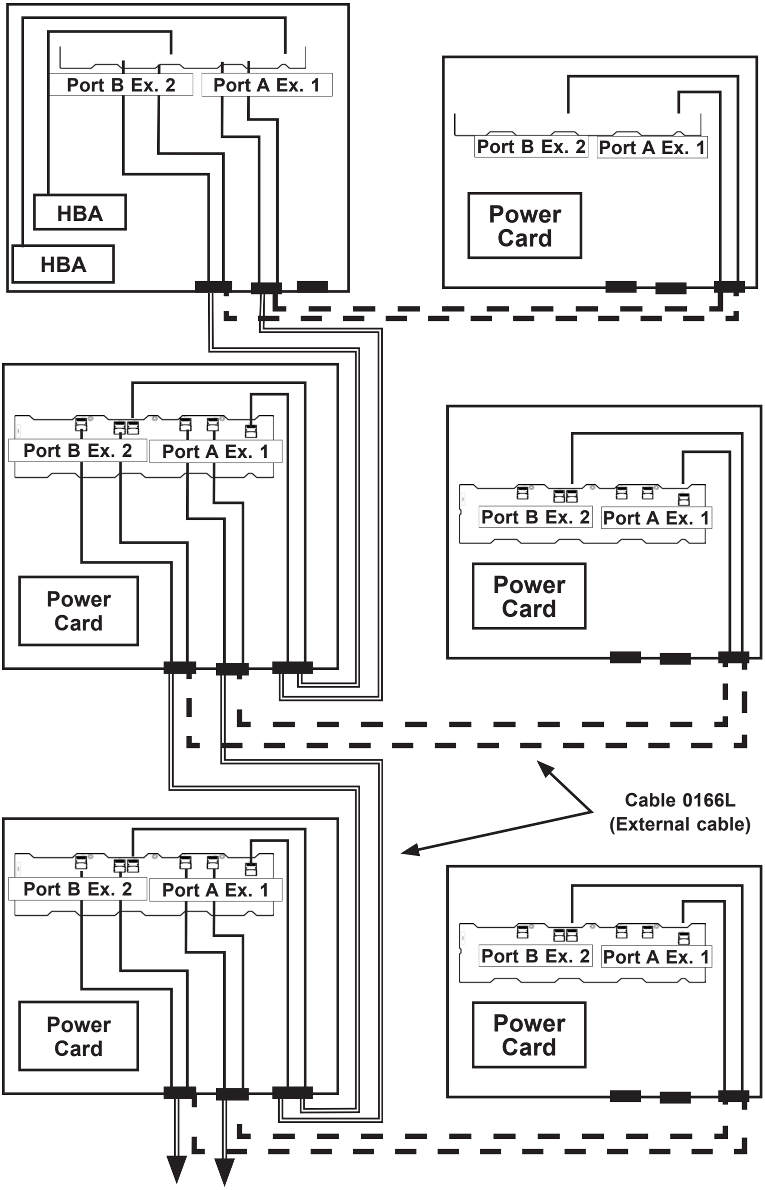

Port B Ex. 2
Port A Ex. 1
HBA
HBA
Port B Ex. 2
Port A Ex. 1
Power Card
Port B Ex. 2
Port A Ex. 1
Power Card
Port B Ex. 2
Port A Ex. 1
Power Card
Cable 0166L
(External cable)
Port B Ex. 2
Port A Ex. 1
Power Card
Port B Ex. 2
Port A Ex. 1
Power Card

Figure D-25: Dual SAS HBA with Cascaded Configuration and Branching

**IMPORTANT:** See Section D-12 of this manual, *Failover with RAID Cards and Multiple HBAs* for important information on supported configurations.

# Appendix E

# SAS2-846EL Backplane Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

## E-1 ESD Safety Guidelines

*Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.*

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the backplane by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the backplane and peripherals back into their antistatic bags when not in use.

## E-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

## E-3 An Important Note to Users

All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

## E-4 Introduction to the SAS2-846EL Backplane

The SAS2-846EL backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects SAS2-846EL1 and SAS2-846EL2 PCB Revision 1.10, the most current release available at the time of publication. Always refer to the Supermicro Web site at www.supermicro.com for the latest updates, compatible parts and supported configurations.

The SAS2-846EL1 backplane includes a primary expander chip and primary SAS connectors. The SAS2-846EL2 includes of both primary and secondary expander chips, as well as primary and secondary SAS connectors. The primary and secondary expanders are redundant, so that if one should fail, the other will take over.

## E-5 Front Connectors and Jumpers

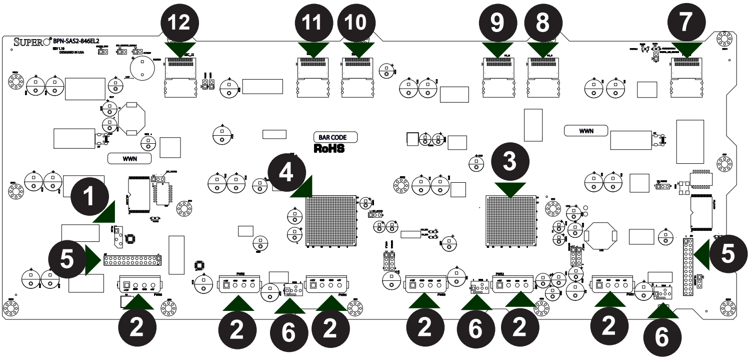


Figure E-1: Front Connectors

### Front Connectors

1. Primary $I^2C$ connector: PRI_I2C
2. Power connectors: PWR1, PWR2, PWR3, PWR4, PWR5, and PWR6
3. Primary expander chip
4. Secondary expander chip (Not available in EL1 backplane)
5. EPP connectors: J26 and J27
6. Fan connectors: FAN1, FAN2 and FAN3
7. Primaray SAS connector: PRI_J0
8. Primary SAS connector: PRI_J1
9. Primary SAS connector: PRI_J2
10. Secondary SAS connector: SEC_J0 (Not available in EL1 backplane)
11. Secondary SAS connector SEC_J1 (Not available in EL1 backplane)
12. Secondary SAS connector SEC_J2 (Not available in EL1 backplane)

# E-6 Front Connector and Pin Definitions

### 1. Primary I$^2$C Connector

The I$^2$C connector is used to monitor the power supply status and to control the fans. See the table on the right for pin definitions.

**I$^2$C Connector Pin Definitions**

| Pin# | Definition |
|---|---|
| 1 | Data |
| 2 | Ground |
| 3 | Clock |
| 4 | No Connection |

### 2. Backplane Main Power Connectors

The 4-pin connectors, designated PWR1, PWR2, PWR3, PWR4, PWR5, and PWR6, provide power to the backplane. See the table on the right for pin definitions.

**Backplane Main Power 4-Pin Connector**

| Pin# | Definition |
|---|---|
| 1 | +12V |
| 2 and 3 | Ground |
| 4 | +5V |

### 3. and 4. Primary and Secondary Expander Chips

This primary and secondary expander chips allow the backplane to support dual ports, cascading, and failover.

### 5. EPP Ports

The EPP ports are used for manufacturer diagnostic purposes only.

### 6. Fan Connectors

The 3-pin connectors, designated FAN1, through FAN3, provide power to the fans. See the table on the right for pin definitions.

| Fan Connectors | |
|---|---|
| Pin# | Definition |
| 1 | Ground |
| 2 | +12V |
| 3 | Tachometer |

### 7. - 13. SAS Connectors

The primary and secondary sets of SAS connectors provide expander features including cascading and failover. From right to left the ports are Primary 0, Primary 1 and Secondary 0, Secondary 1. Note that secondary SAS ports are not present on the SAS2-846EL1 backplane.

## E-7 Front Jumper Locations and Settings

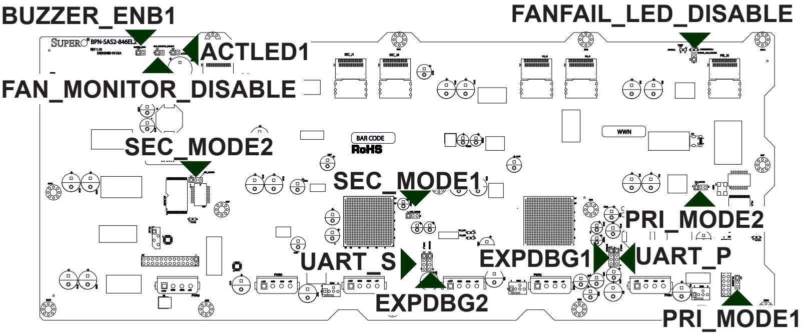
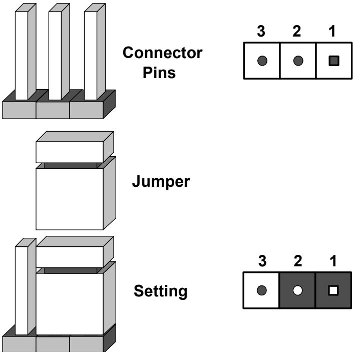

BUZZER_ENB1
FANFAIL_LED_DISABLE
ACTLED1
FAN_MONITOR_DISABLE
SEC_MODE2
SEC_MODE1
PRI_MODE2
UART_S
EXPDBG1
UART_P
EXPDBG2
PRI_MODE1

Figure E-2: Front Jumper Locations and Settings

### Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.


Connector Pins
3 2 1
Jumper
Setting
3 2 1

| General Jumper Settings | | |
|---|---|---|
| **Jumper** | **Jumper Settings** | **Note** |
| PRI_MODE1 and 2 | 2-3 | Factory Setting<br>Do not change |
| SEC_MODE1 and 2 | 2-3 | Factory Setting<br>Do not change |
| EXPDBG1 and 2 | No jumper required | Debug, SMC internal use only. (EXPDBG2 not present on SAS2-846EL2) |
| MDI01 and 02 | No jumper required | SMC internal use only |
| UART_P1 | No jumper required | Primary UART connector |
| UART_S1 | No jumper required | Secondary UART connector (Not present on SAS2-847E2) |
| JP1 | No jumper required | Buzzer connector |
| BUZZER_ENB1 | Open: Disabled (Default)<br>Closed: Enabled | Buzzer settings* |
| ACTLED1 | Open: Disabled (Default)<br>Closed: Enabled | Activity LED settings |
| FAN_MONITOR_DISABLE | Open: Disabled (Default)<br>Closed: Enabled | Fan monitor LED settings |

*The buzzer sound indicates that a condition requiring immediate attention has occurred.

***The buzzer alarm is triggered by the following conditions:***

1. Hard drive failure

2. Fan failure

3. System temperature over 45º Celsius.

| Front LEDs | | |
|---|---|---|
| **LED** | **State** | **Specification** |
| FANFAIL1 | On | Fan failure |
| OVERHEATFAIL1 | On | Overheat/Drive Failure LED Indicator<br>(Red light: flashing, buzzer: on) |

## E-9 Rear Connectors and LED Indicators

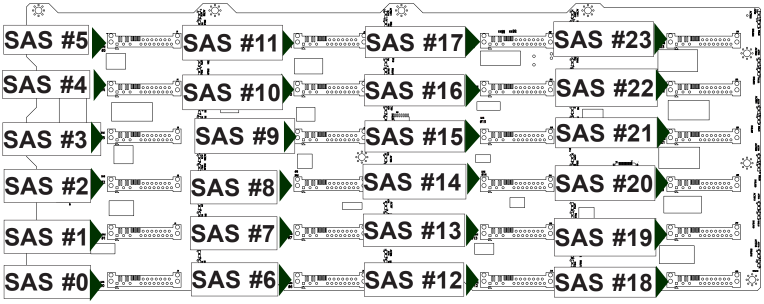

SAS #5
SAS #11
SAS #17
SAS #23
SAS #4
SAS #10
SAS #16
SAS #22
SAS #3
SAS #9
SAS #15
SAS #21
SAS #2
SAS #8
SAS #14
SAS #20
SAS #1
SAS #7
SAS #13
SAS #19
SAS #0
SAS #6
SAS #12
SAS #18

Figure E-3: Rear Connectors

| Rear SAS/SATA Connectors | | | |
|---|---|---|---|
| **Rear Connector** | **SAS Drive Number** | **Rear Connector** | **SAS Drive Number** |
| SAS #0 | SAS/SATA HDD #0 | SAS #12 | SAS/SATA HDD #12 |
| SAS #1 | SAS/SATA HDD #1 | SAS #13 | SAS/SATA HDD #13 |
| SAS #2 | SAS/SATA HDD #2 | SAS #14 | SAS/SATA HDD #14 |
| SAS #3 | SAS/SATA HDD #3 | SAS #15 | SAS/SATA HDD #15 |
| SAS #4 | SAS/SATA HDD #4 | SAS #16 | SAS/SATA HDD #16 |
| SAS #5 | SAS/SATA HDD #5 | SAS #17 | SAS/SATA HDD #17 |
| SAS #6 | SAS/SATA HDD #6 | SAS #18 | SAS/SATA HDD #18 |
| SAS #7 | SAS/SATA HDD #7 | SAS #19 | SAS/SATA HDD #19 |
| SAS #8 | SAS/SATA HDD #8 | SAS #20 | SAS/SATA HDD #20 |
| SAS #9 | SAS/SATA HDD #9 | SAS #21 | SAS/SATA HDD #21 |
| SAS #10 | SAS/SATA HDD #10 | SAS #22 | SAS/SATA HDD #22 |
| SAS #11 | SAS/SATA HDD #11 | SAS #23 | SAS/SATA HDD #23 |

| Rear LED Indicators | | |
|---|---|---|
| **Rear Connector** | **Hard Drive Activity LED** | **Failure LED** |
| SAS #0 | ACT #0 | FAIL #0 |
| SAS #1 | ACT #1 | FAIL #1 |
| SAS #2 | ACT #2 | FAIL #2 |
| SAS #3 | ACT #3 | FAIL #3 |
| SAS #4 | ACT #4 | FAIL #4 |
| SAS #5 | ACT #5 | FAIL #5 |
| SAS #6 | ACT #6 | FAIL #6 |
| SAS #7 | ACT #7 | FAIL #7 |
| SAS #8 | ACT #8 | FAIL #8 |
| SAS #9 | ACT #9 | FAIL #9 |
| SAS #10 | ACT #10 | FAIL #10 |
| SAS #11 | ACT #11 | FAIL #11 |
| SAS #12 | ACT #12 | FAIL #12 |
| SAS #13 | ACT #13 | FAIL #13 |
| SAS #14 | ACT #14 | FAIL #14 |
| SAS #15 | ACT #15 | FAIL #15 |
| SAS #16 | ACT #16 | FAIL #16 |
| SAS #17 | ACT #17 | FAIL #17 |
| SAS #18 | ACT #18 | FAIL #18 |
| SAS #19 | ACT #19 | FAIL #19 |
| SAS #20 | ACT #20 | FAIL #20 |
| SAS #21 | ACT #21 | FAIL #21 |
| SAS #22 | ACT #22 | FAIL #22 |
| SAS #23 | ACT #23 | FAIL #23 |

# E-10 Single and Dual Port Expanders

### Single Ports

SAS2-846EL1 backplanes have a single-port expander that accesses all hard drives and supports cascading.

### Dual Ports

SAS2-846EL2 backplanes have dual-port expanders that access all the hard drives. These dual-port expanders support cascading, failover, and multipath.

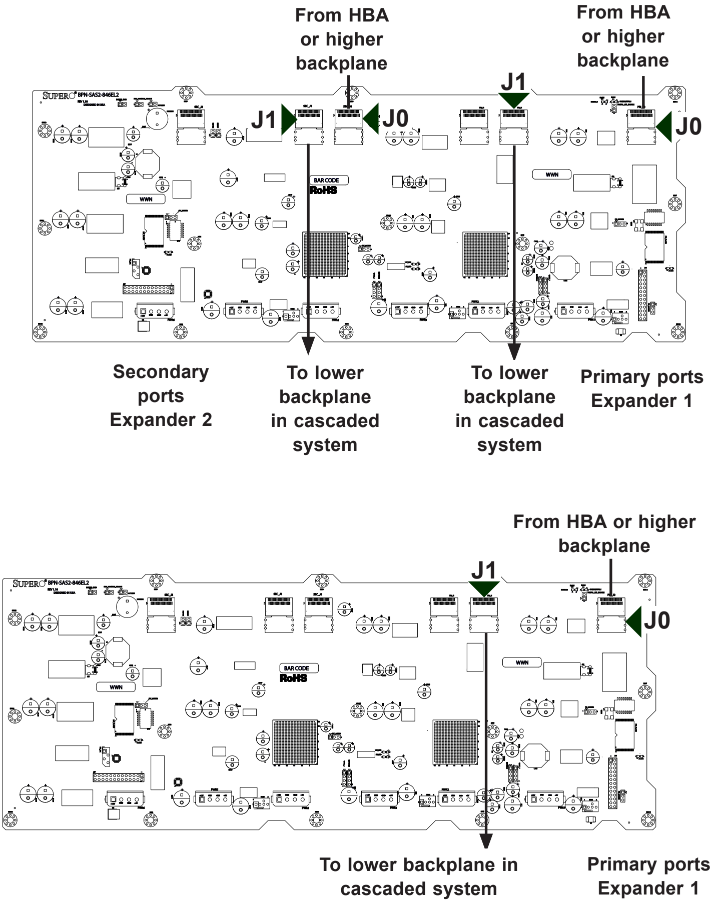

From HBA or higher backplane
From HBA or higher backplane
J1
J1
J0
J0
Secondary ports Expander 2
To lower backplane in cascaded system
To lower backplane in cascaded system
Primary ports Expander 1
From HBA or higher backplane
J1
J0
To lower backplane in cascaded system
Primary ports Expander 1

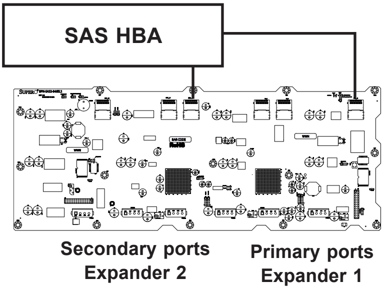
Figure E-4: Dual Port Cascading Configurations

# E-11 Failover

The SAS2-846EL2 backplane has two expanders which allow effective failover.

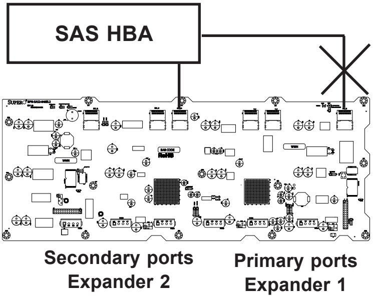
## Single Host Bus Adapter

In a single host bus configuration, the backplane connects to one Host Bus Adapter (HBA).


SAS HBA
Secondary ports
Expander 2
Primary ports
Expander 1

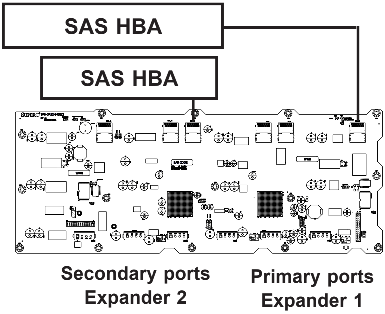
## Single Host Bus Adapter Failover

If the expander or data path in the primary ports fails, the system automatically switches to secondary ports.


SAS HBA
Secondary ports
Expander 2
Primary ports
Expander 1

## Dual Host Bus Adapter

In a dual host bus configuration, the backplane connects to two host bus adapters.


SAS HBA
SAS HBA
Secondary ports
Expander 2
Primary ports
Expander 1

## Dual Host Bus Adapter Failover

If the expander or data path in the primary ports fails, the system automatically switches to the secondary ports. This maintains a full connection to all drives.

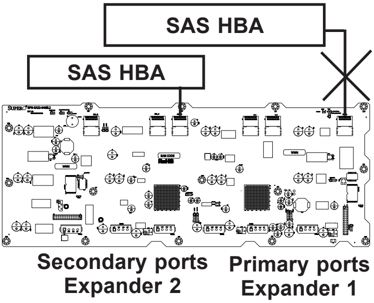

SAS HBA
SAS HBA
Secondary ports
Expander 2
Primary ports
Expander 1

**Figure E-5: Failover Configurations**

# E-12 Chassis Power Card and Support Cables

## Chassis Power Card

In a cascaded configuration, the first chassis includes a motherboard and at least one host bus adapter. Other servers in this enclosed system, include a power card. This section describes the supported power card for the SAS2-846EL series backplanes.

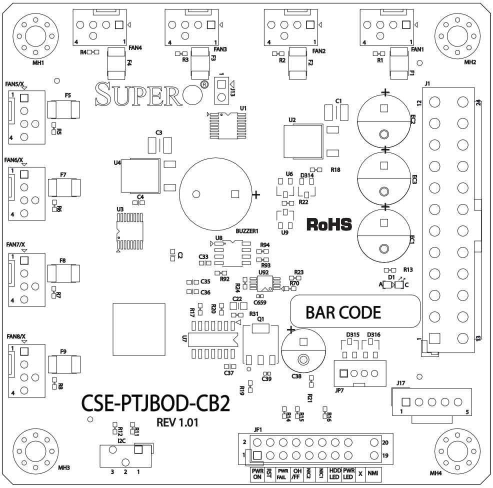
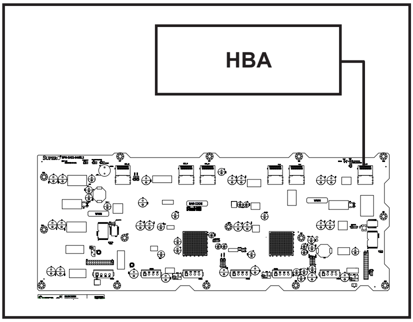

FAN4
FAN3
FAN2
FAN1
MH1
MH2
MH3
MH4
R4
R3
R2
R1
F4
F3
F2
F1
FAN5/X
FAN6/X
FAN7/X
FAN8/X
F5
F7
F8
F9
R5
R6
R7
R8
SUPERO
J13
U1
U2
U3
U4
C1
C3
C4
J1
12
24
1
13
EC1
EC2
EC3
R18
U6
D314
R22
U9
RoHS
BUZZER1
U8
R94
R93
C33
C2
R92
U92
R23
R70
R24
C35
C36
R13
D1
A
C
C22
C659
R17
R20
R31
Q1
BAR CODE
U7
C37
C39
C38
D315
D316
JP7
J17
R19
R21
CSE-PTJBOD-CB2
REV 1.01
R12
R11
I2C
R14
R15
R16
JF1
2
1
20
19
3 2 1
5
PWR ON
RST
PWR FAIL
OH /FF
NIC2
NIC1
HDD LED
PWR LED
X
NMI

Figure E-6: Chassis Power Card (Sold Separately)

| Power Card | | |
|---|---|---|
| **Part Number** | **Part Type** | **Where Used** |
| CSE-PTJBOD-CB2 | Power card | Allows the chassis to be in a JBOD (Just a Bunch of Drives) system. |

## Connecting an Internal Host Bus Adapter to the Backplane

The following section lists the most common cables used to connect the host bus adapter to the backplane.



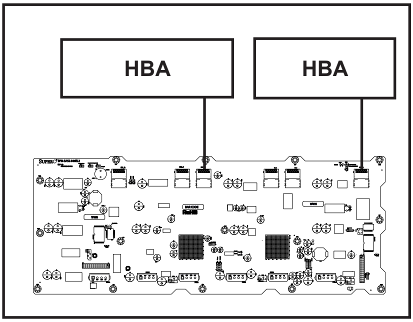


Figure E-7: Connecting an Internal HBA to the Backplane

## Supported Internal HBA Cables

Use the following listed cables to create connections between the internal HBA and SAS2-846EL backplane. The cables required depend on the HBA connector.

**Cable Name:** iPass TO 4-lane

**Part #:** CBL-0117L **Length:** 46 cm (18 inches)

**Description:** This cable has one SFF-8484 (32-pin) connector on one end and iPass (SFF-8087/Mini-SAS) connector (36 pins) at the other. This cable connects from the HBA to the SAS2-846EL backplane.

**Cable Name:** iPass (Mini-SAS) to iPass (Mini-SAS)

| | |
|---|---|
| **Part #:** CBL-0108L-02 | **Length:** 39 cm (15 inches) |
| **Part #:** CBL-0109L-02 | **Length:** 22 cm (9 inches) |
| **Part #:** CBL-0110L-02 | **Length:** 18 cm (7 inches) |

**Description:** This cable has an iPass (SFF-8087/Mini-SAS) connector (36-pin) at each end. It connects from the HBA to the SAS2-846EL backplane.

## Supported External HBA to Backplane Cable

Use the following cable if your external HBA has an InfiniBand connector.

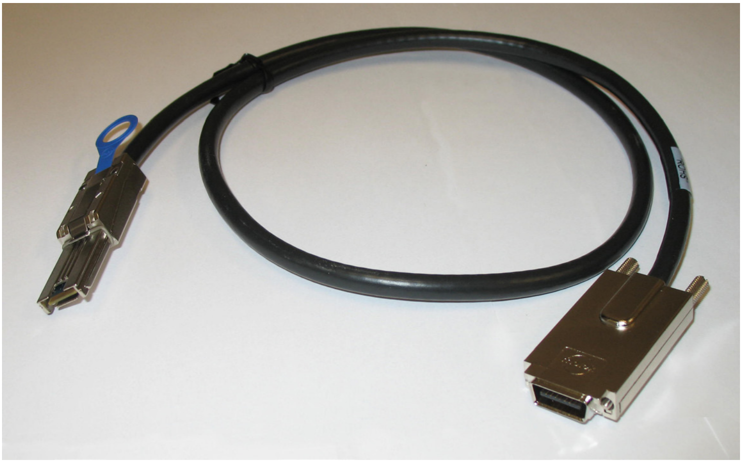


Figure E-8: The CBL-0200L Cable

**Cable Name:** SAS InfiniBand to Mini SAS X4 1M cable, PBF

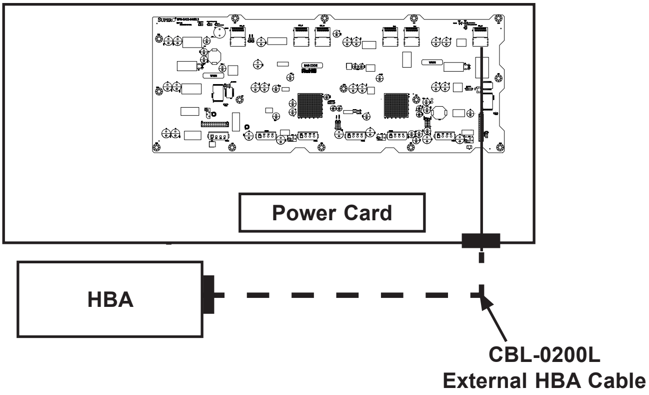
**Part #:** CBL-0200L **Length:** 1 meter

**Description:** This cable has an InfiniBand connector (SFF-8470) on one end and an SFF-8088-1X (26-pin) at the other end.

## Connecting an External Host Bus Adapter to the Backplane

This backplane supports external Host Bus Adapters. In this configuration, the HBA and the backplane are in different physical chassis. This allows a JBOD configuration system to connect to the other system that has a HBA.

### Single External Host Bus Adapter


Power Card
HBA
CBL-0200L
External HBA Cable

### Dual External Host Bus Adapter

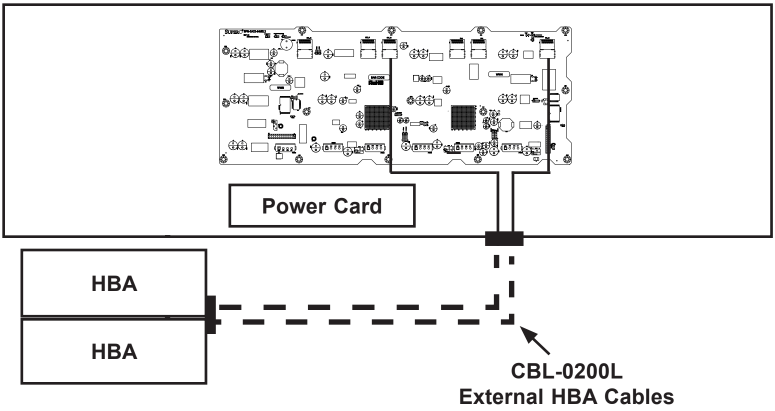

Power Card
HBA
HBA
CBL-0200L
External HBA Cables

**Figure E-9: Connecting Single and Dual HBAs to the Backplane**

## Supported External HBA to Backplane Cable

Use the following cable if your external HBA has an InfiniBand connector.

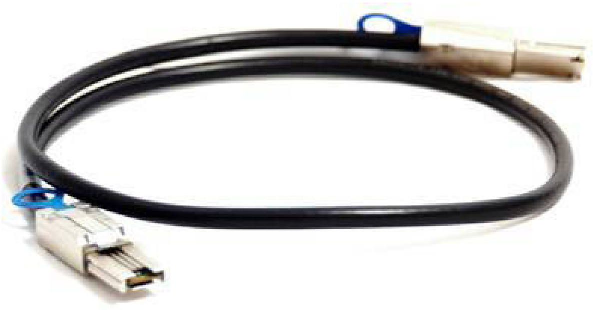


**Figure E-10: External Cable (CBL-0166L)**

**Cable Name:** SAS EL2/EL1 Cascading Cable (External), 68 cm

**Part #:** CBL-0166L (SFF-8088 1x to SFF-8088 x1)
**Ports:** Single or Dual
**Placement:** External cable

**Description:** External cascading cable. Connects ports between servers. With most connectors, use one cable for single port connections and two cables for dual port connections.

## Connecting Multiple Backplanes in a Single Channel Environment

This section describes the cables used when cascading from a single HBA. These connections use CBL-0167L internal cables and CBL-0166L external cables.

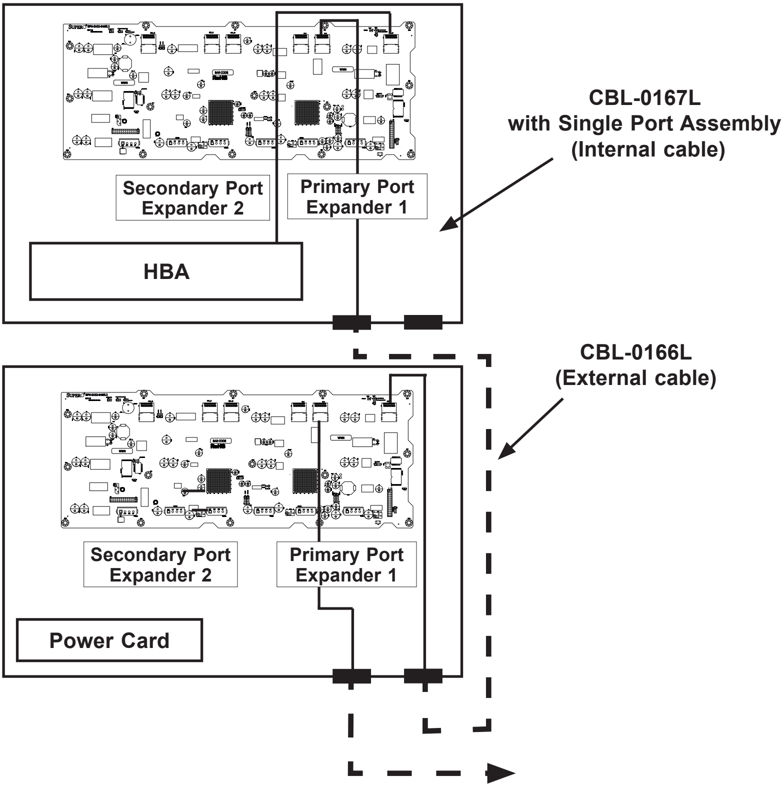

CBL-0167L
with Single Port Assembly
(Internal cable)
Secondary Port Expander 2
Primary Port Expander 1
HBA
CBL-0166L
(External cable)
Secondary Port Expander 2
Primary Port Expander 1
Power Card

Figure E-11: Single HBA Configuration

## Single HBA Configuration Cables

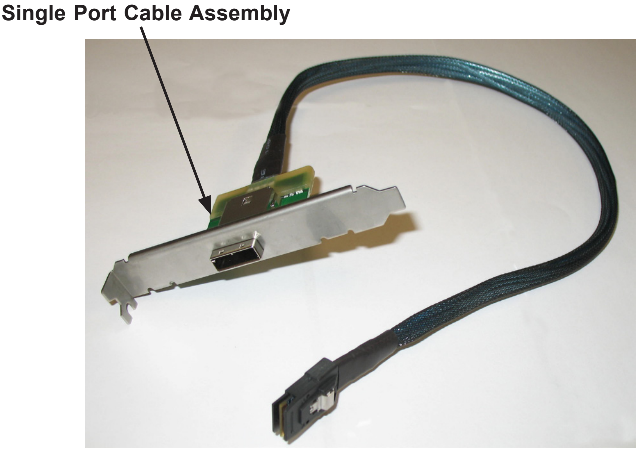


Figure E-12: Single Port Internal Cable (CBL-0167L)

**Cable Name:** SAS EL2/EL1 Backplane Cable (Internal) with 2-port Cascading Cable, 68 cm

**Part #:** CBL-0167L (SFF-8087 to SFF-8088 x1)
**Ports:** Single
**Placement:** Internal cable

**Description:** Internal cable. Connects the backplane to the Host Bus Adapter (HBA) or external port. Used in single port environments.

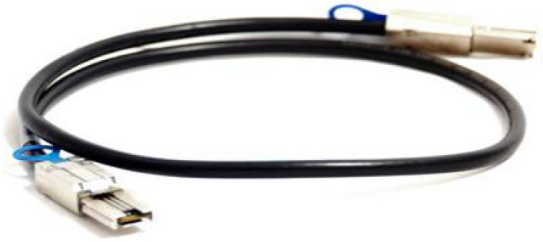


Figure E-13: External Cable (CBL-0166L)

**Cable Name:** SAS EL2/EL1 Cascading Cable (External), 68cm

**Part #:** CBL-0166L (SFF-8088 1x to SFF-8088 x1)
**Ports:** Single or Dual
**Placement:** External cable

**Description:** External cascading cable. Connects ports between servers. With most connectors, use one cable for single port connections and two cables for dual port connections.

## Connecting Multiple Backplanes in a Dual Channel Environment

This section describes the cables used when cascading from dual HBAs. These connections use CBL-0168L internal cables and CBL-0166L external cables.

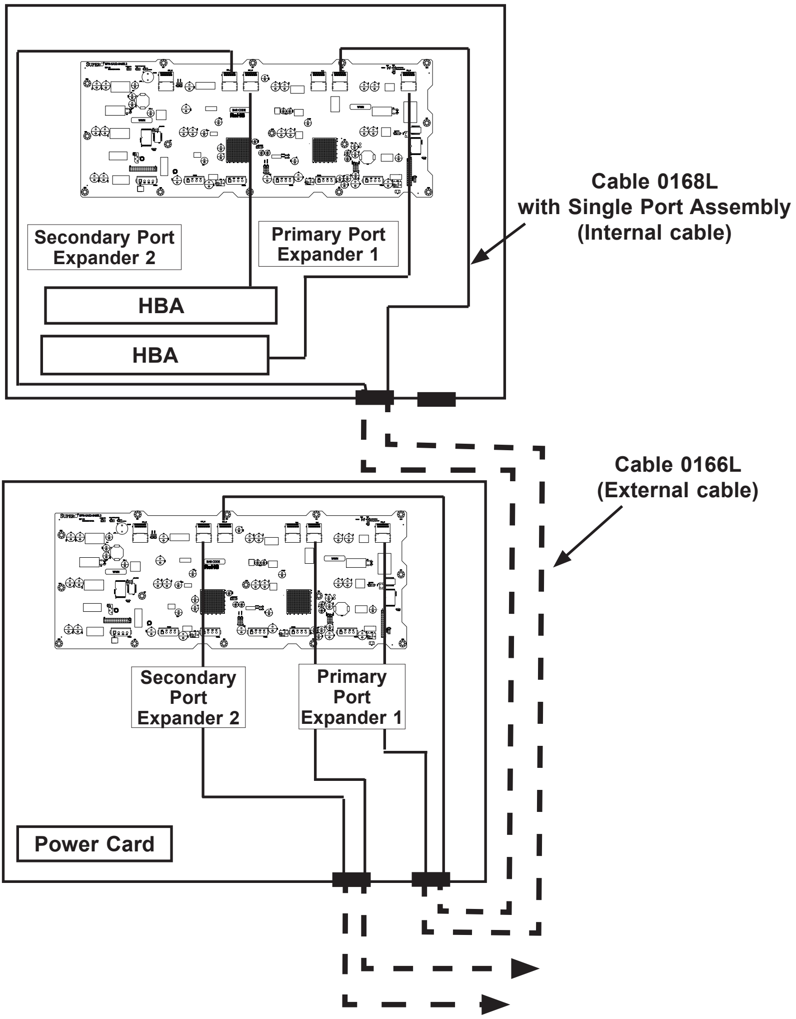

Secondary Port Expander 2
Primary Port Expander 1
HBA
HBA
Cable 0168L with Single Port Assembly (Internal cable)
Cable 0166L (External cable)
Secondary Port Expander 2
Primary Port Expander 1
Power Card

Figure E-14: Multiple Backplanes in a Dual Channel Environment

## Dual HBA Configuration Cables

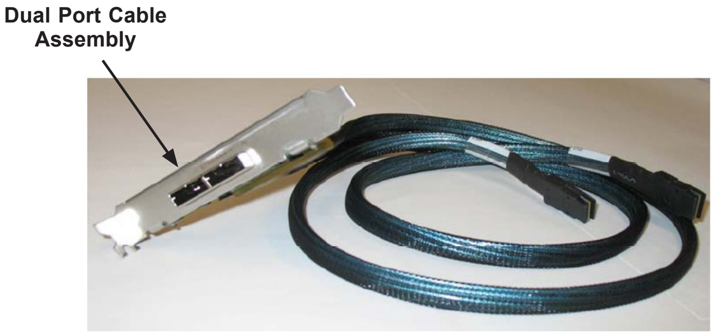


Figure E-15: Dual Port Internal Cable (CBL-0168L)

**Cable Name:** SAS Dual-port Cable Assembly, 68/76 cm

**Part #:** CBL-0168L **Placement:** Internal cable
**Ports:** Dual

**Description:** Internal cascading cable. Connects the backplane to the HBA or external port. Used in dual port environments.

## E-13 Supported Cascading Configurations

Cascading allows the system to access data at a faster rate by allowing several backplanes to share resources to reduce latency time.

The first backplane in a cascaded system requires a motherboard and an HBA. Other servers require a power control card with no motherboard and no HBA. For more information, see the SC846 Chassis Manual available at www.supermicro.com.

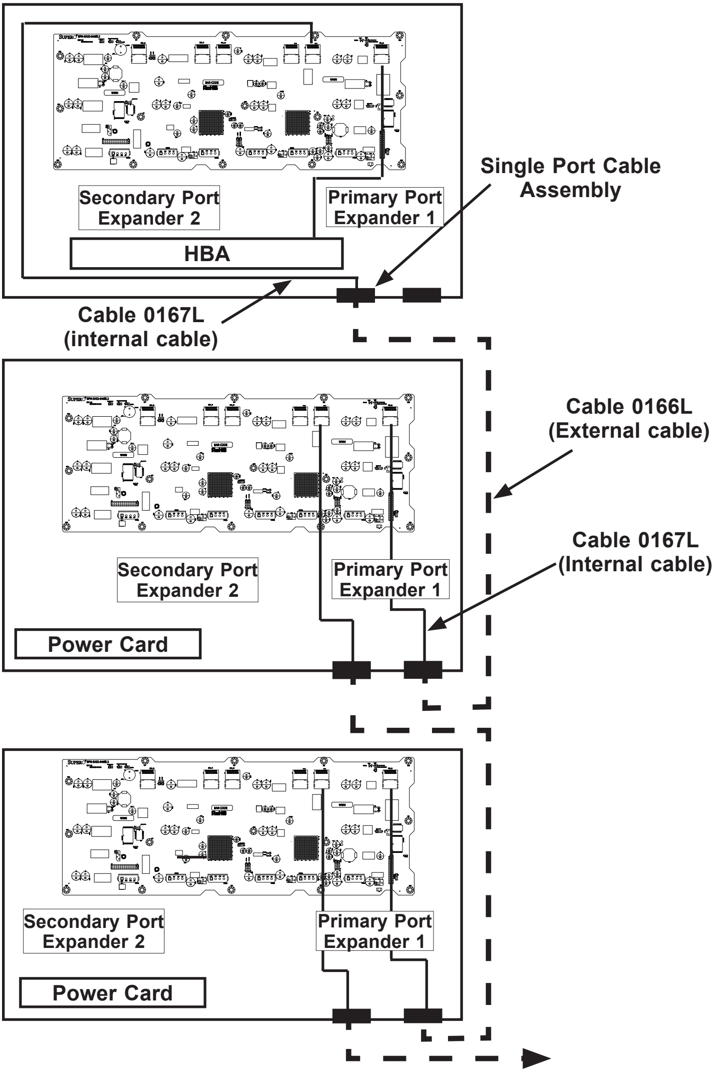

Single Port Cable Assembly
Secondary Port Expander 2
Primary Port Expander 1
HBA
Cable 0167L (internal cable)
Cable 0166L (External cable)
Cable 0167L (Internal cable)
Secondary Port Expander 2
Primary Port Expander 1
Power Card
Secondary Port Expander 2
Primary Port Expander 1
Power Card

Figure E-16: Simple Cascaded Configurations

## Dual SAS HBA and Cascaded Configuration

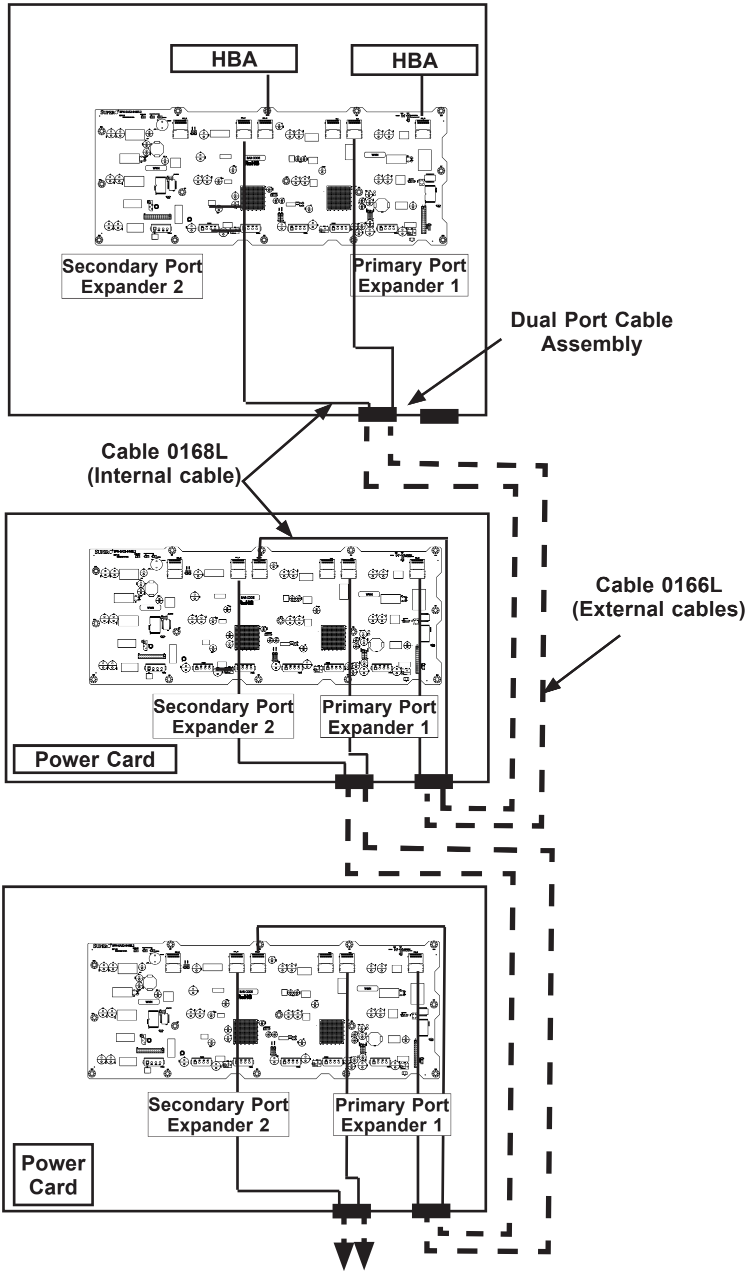

HBA
HBA
Secondary Port
Expander 2
Primary Port
Expander 1
Dual Port Cable
Assembly
Cable 0168L
(Internal cable)
Secondary Port
Expander 2
Primary Port
Expander 1
Power Card
Cable 0166L
(External cables)
Secondary Port
Expander 2
Primary Port
Expander 1
Power
Card

Figure E-17: Dual SAS HBA with Cascaded Configuration

# Appendix F

# SC846B Chassis Specifications

## F-1 Overview

This appendix provides assembly instructions specific to SC846B model chassis only.

## F-2 Revisions to the Data in this Appendix

| Content Revision History | | |
|---|---|---|
| **Date** | **Revision** | **Changes** |
| 12/16/11 | 1.0 | Initial revision |

## F-3 Installation Instructions for SC846B Models

The SC846B model chassis is specially designed with two peripheral drive bays located in the rear of the chassis. For information on which drives are compatible with the SC846B contact Supermicro's Technical Support department at www.supermicro.com.

## F-4 Installing a DVD-ROM Drive

### Identifying the DVD-ROM Drive Components

Use the photograph below to identify the components which are required to install the DVD-ROM drive into the rear peripheral bay of the SC846B chassis:

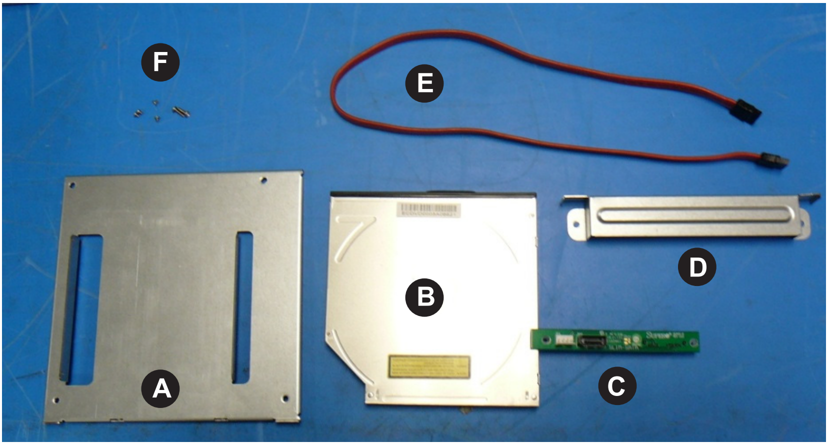


Figure F-1: SC846B DVD-ROM Components

***DVD-ROM Drive Components***

A. Lower bracket

B. DVD-ROM drive

C. DVD-ROM backplane

D. Upper bracket

E. SATA cable

F. Mounting screws

### *Installing a DVD-ROM Drive*

1. Disconnect the power from the chassis by unplugging the power cord.

2. Remove the screws securing the dummy cover into the rear peripheral drive bay. This bay is located on the rear of the chassis beside the power supplies.

3. Lift the dummy cover up and out of the peripheral drive bay.

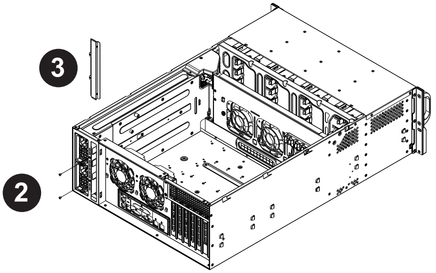


**Figure F-2: Removing the Dummy Cover from the Peripheral Drive Bay**

4. Align the mounting holes in the DVD backplane with those in the rear of the DVD-ROM drive.

5. Secure the backplane to the rear of the DVD-ROM drive using two screws.

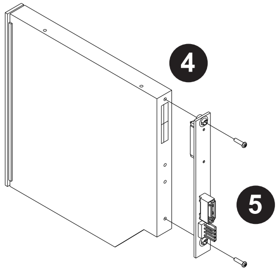


**Figure F-3: Securing the Backplane to the DVD-ROM Drive**

6. Place the drive onto the lower bracket and align the mounting holes in the drive with those in the bracket.

7. Use four mounting screws to secure the lower bracket to the drive.

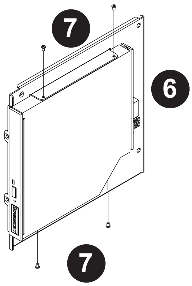


Figure F-4: Installing the Lower Bracket onto the DVD-ROM Drive

8. Place the upper bracket onto the drive and align the mounting holes in the drive with the holes in the upper bracket.

9. Secure the upper bracket to the drive using two screws as shown below.

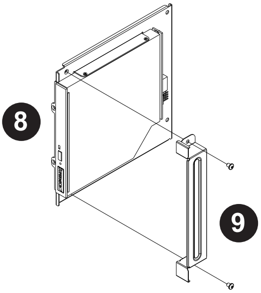


Figure F-5: Installing the Upper Bracket on the DVD-ROM Drive

10. Place the DVD-ROM assembly into the chassis, positioning it so that the bottom bracket is against the interior wall of the power supply bay and the front of the DVD-ROM drive is accessible through the opening of the rear DVD-ROM bay.

11. Align the mounting holes in the DVD-ROM with those in the interior wall of the power supply bay and those on the exterior at the rear of the chassis between the DVD-ROM bay and the power supply bay. Secure the DVD assembly to the chassis using two screws on the interior wall, and two screws on the rear of the chassis

12. Connect the SATA cable to the SATA port on the backplane.

# F-5 Installing the Hard Drive Assembly

## Identifying the Hard Drive Assembly Components

Use the photograph below to identify the components which are required to install the hard drvie into the rear peripheral bay of the SC846B chassis:

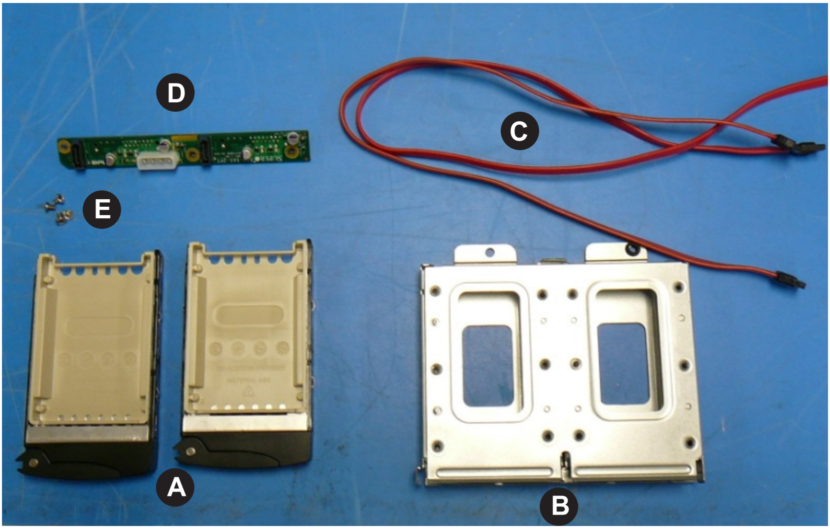


Figure F-6: SC846B Hard Drive Assembly Components

***Hard Drive Assembly Components***

A. Two 2.5" hard drive carriers

B. Hard drive cage

C. Two SATA cables

D. Hard drive backplane

E. Mounting screws

### *Installing the Hard Drive Assembly*

1. Disconnect the power from the chassis by unplugging the power cord.

2. Remove the screws securing the dummy cover into the rear peripheral drive bay. This bay is located on the rear of the chassis beside the power supplies.

3. Lift the dummy cover up and out of the peripheral drive bay.

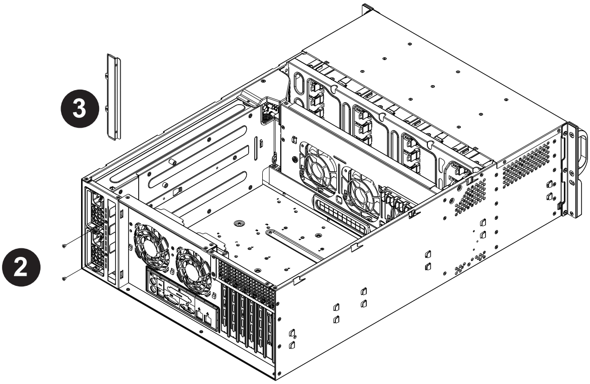


**Figure F-7: Removing the Dummy Cover from the Peripheral Drive Bay**

4. Align the mounting holes in the hard drive backplane with those in the rear of the hard drive cage

5. Secure the backplane to the rear of the hard drive cage using two screws.

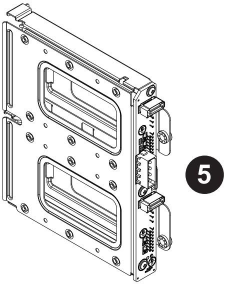


**Figure F-8: Installing the Backplane onto the Hard Drive Cage**

6. Remove the dummy drives from the hard drive carriers.

7. Insert a drive into the carrier with the PCB side facing down and the connector end toward the rear of the carrier.

8. Align the drive in the carrier so that the mounting holes of both are aligned. Note that there are holes in the carrier marked "SAS" or “SATA” to aid in correct installation.

9. Secure the drive to the carrier with four screws as illustrated above. Use the four M3 flat-head screws included in the HDD bag of your accessory box. Note that the screws used to secure the dummy drive to the carrier cannot be used to secure the hard drive.

10. Insert the hard drive and drive carrier into its bay vertically, keeping the carrier oriented so that the release button is on the bottom. When the carrier reaches the rear of the bay, the release handle will retract.

11. Using the thumb, push against the upper part of the hard drive handle. Push the hard drive into the hard drive bay as illustrated below, until the hard drive clicks into the locked position.

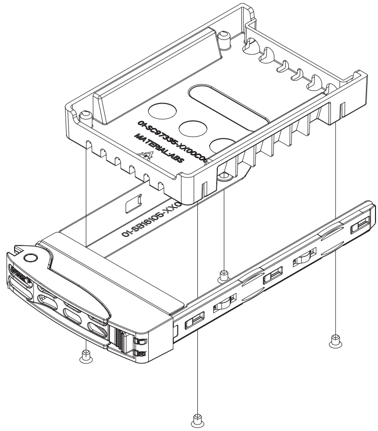


**Figure F-9: Installing a Hard Drive into the Hard Drive Carrier**

12. Place the hard drive assembly into the chassis, positioning it so that the mounting holes in the front of the hard drive align with those in the front of the the chassis and the mounting holes in the interior wall of the power supply bay align with those on the hard drive cage.

13. Secure the hard drive assembly to the chassis using two screws on the interior wall, and two screws on the rear of the chassis

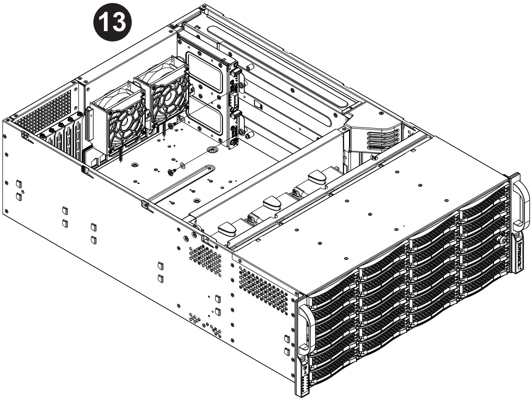


Figure F-10: Installing the Hard Drive Assembly into the Chassis

14. Connect the SATA cable to the SATA port on the backplane

15. Connect the power cords to the power supplies and power-up the server.

Disclaimer (cont.)

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